Rev. C. Clark
at ~~Hartford at the old Baptist~~
meeting house ~~in Hartford~~

Murpel, Clark's.

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No. 33.

# Lecture 1st

## Inflamation

There is perhaps nothing more necessary for the Surgeon to understand, than the principles of inflamation; for as there is a certain degree of it wh is necessary to restore diseased parts to their healthy state, so there is likewise other grades wh are incapable of performing this restoration: of course therefore a knowledge of its principles, and also of appearances wh it has in performing this restoration of diseased parts is absolutely necessary for the Surgeon. - The Term inflamation was given to this process from the Supposition of an accumulation of fire in the part infl.d But this Idea is altogether incorrect, yet the term answers very well to express our Idea of that particular operation - It may be connected with other diseases or not.

an

a par instance of the former we see in Scrofula and Syphilis &c - frequently improper treatment is the result of ignorance of the Symptoms wh violent inflamation leaves behind it; for instance; I knew a case of a Sprained ancle, wh after inflamation abated was very weak, medical assistance was call'd and the Physician prescribed some medicines wh threw the Patient into a hectic Fever.

An Inflamed part performs its functions with difficulty, an instance of this we see in the Eye wh when violently inflamed looses the power of vision.

Inflamation is of three kinds viz the adhesive. Suppurative & Ulcerative I shall only treat of the healthy kind in this Lecture.

Inflamation is not necessarily a disease. because disease always tends to a dissolution of the part, but inflamation is sometimes necessary for its restoration - In the healthy

healthy state it is of a pale red color; accompanied with a preternatural sensation; if seated in the skin, very often preceded by itching - heat, and a dull throbing pain accompanies it. Weakness is never a disease tho it is often a predisposing cause of it - The causes of inflamm are chemical & mechanical or fever - of the first are heat cold acrid substances, caustics, &c. of the second are wounds, bruises, ruptures &c - Inflamm does not always immediately follow the application of its causes. 24 hours some times intervening. A cause that will at one time excite inflamm of one kind will at an other time in the same constitution excite a different one -

Different remote causes have been supposed to ~~excite~~ (or produce) different kinds of inflammation I think the variety is owing to the difference in the situation of the affected part, for the same remote causes will produce Erysipelas in the face and common inflamation in the

the other parts. Fever is some times the remote cause as in critical abscesses. In Phlegmonic infl^n when suppuration takes place it is called a critical abscess

The effects of the remote causes are influenced very much by habit E.g. a person unaccostomed to work, will blister his hands very soon; and a person unaccostomed to high degrees of heat will bear much less without injury, than one daily exposed to it -

If suppuration follows infl^n; it is termed critical abscess - The healthy kinds of infl^n are adhesive, & suppurative.

An adhesive infl^n is an increased action of the vessels causing an extravasation of the coagulating Lymph - It begins in the small vessels & spreads from a point in it (for the most part) it ~~spreads~~ over a large surface and is always greatest at the point where it begins -

Suppurating infl^n is an increased action of the vessels secreting Pus. In

In adhesive inflⁿ the matter wh forms the union is coagulating Lymph. The Red Globules are thrown out likewise, but are again absorbed. When inflⁿ supervenes in a ~~certain~~ particular part, that part receives a more copious flow of blood through it than a healthy part in consequence of the increased action of the blood vessels. That there is an increased action is proved by the parts being of a pale red colour. If there there was a diseased action, or the blood was stagnated or retarded in its course, it would be of a purple colour as we see in Ligatures, Gangrene & Mortification — The diameters of the Vessels are likewise increased, wh is proven by Dr Hunters experiments on the ears of a Rabit — The Swelling in inflⁿ arises both from the thickening of the coats of the vessels, and from the extravasation of Lymph — the Swelling is greatest at the point where the inflⁿ commences — The pain is produced by the Spasm or convulsive action of the Vessels ~~and from~~

much in the same manner as it is produced in cramp or Tetanus or by distension. when infl^n^ proceeds to gangrene it is of a purple colour — The heat of an inflamed part is considerably increased; but never rises higher than the body — for the Thermometer when applied to an inflamed part ~~ascends~~ no higher than when applied to a healthy part — The matter secreted in the adhesive stage of infl^n^ is coagulating Lymph wh forms the medium for future membranes & vessels and thereby becomes the union of the parts — The Lymph secreted in adhesive inflamation becomes in time vascular and may be injected Mr. Hunter ~~found~~ proved that coagulating Lymph was thrown out by observing that the matter found on the surface of inflamed cavities corresponded in every particular with the Lymph of the blood when divested of Serum and Globules. The Coagulable Lymph is changed in passing thro. the vessels; for

of

for if it be thrown out on the internal surface of a Vein, it refuses to mix with the circulating Mass. The effects of adhesive infln on the constitution vary according to the degree of violence and the part affected

It is attended with little inconvenience when seated in the Skin but in the Theca of a Tendon or Periosteum it occasions great Pain producing Symptomatic Fever. If the infln be ~~great~~ violent the pulse is full quick & hard; and blood drawn is Sizy This infln often terminates Spontaneously in wh case it is termed Spontaneous Resolution, or adhesive,

A Man about 36 years of age received a bruise on the Leg by the fall of a bar of Iron on it, which came on - I was called to see him about 6 days after the accident - his body was all in a tremor his extremities cold and Clammy and his pulse small and quick his strength much diminished - he

he was cured by a dose of Laudanum and the external application of it mixed with a bread & Milk poultice applied to the part affected - I have seen death induced in this way by the inflm of Lacerated wounds of the Joints. Tumors frequently occur in the Breasts of women, and likewise in the throat (called Schirrus Tonsils) and are produced by the effects of simple inflm occasioned by the Lymph not being absorbed when the inflammatory action ceased; this takes place in Glandular swellings & forms what is called a Schirrus Tumor - by this it appears there is no cancerous tendency in the blood - Inflm also terminates by the Secretion of Serum - that Inflm Terminates by an effusion of Serum we infer from its being lessened by the application of cantharides when they draw well, & blisters wh run well are much easier cured than those wh do not -

It is highly probable that Inflm

Inflm of the Brain terminates in this way producing Hydrocephalus internus, and that of the Chest producing Hydrothorax and that in the Tunica Vaginalis forming Hydrocele &c - Local inflms are frequently cured by fever - Hemorhage sometimes terminates inflm - A remarkable instance of inflm of the Eye wh had resisted blood letting and other remedies was cured by the accidental bursting of an Artery of the Eyelid wh bled considerably - I have seen an incurable case of Fistula in Ano from not bleeding in the inflamatory stage

If Inflm be not stopped by some of these means it proceeds to Suppuration - when inflm happens from accident and proceeds too far we should attempt Resolution in general. but there are cases in wh Resolution should not be attempted. as 1st in very warm weather lest we induce Tetanus. a generous diet & cordial drink should rather be

recom

recommended. 2nd if accasioned by a constitutional disease as Fever. 3d if it be owing to the removal of any worse disease. when it occurs in any important part it should always be attempted to be resolved - Some infln is necessary for the restoration of the part -

Treatment To effect a cure in the first place the remote causes should be removed - 2nd reduce the inflamitory action that the parts may take on a healthy one -

The Remedies for infln are divided into General & Local. The General or constitutional remedies are Low diet bleeding, Purging, Neutral Salts, antimonials, diluents, Tamarind-water, &c Low diet tends to empty the blood vessels; but bloodletting is the most powerful remedy in infln; Since inflamed vessels are under the necessity of contracting to adapt

them selves

themselves to the column of blood; and as contraction is a very different action from infl$^{n}$, it allows the parts to take on a natural action by diverting them from the inflamatory one - Bloodletting acts in two ways; first it removes the stimulus of distention by lessening the impetus of the blood: and Secondly by lessening the volume of the blood itself. Bloodletting is one of the best remedies for infl$^{n}$

The 3$^{d}$ General Remedy is purging, this acts also by lessening the action of the vessels, except when they produce Nausea, then they act Sympathetically; tho we are obliged to decline it in Some cases on account of the inconvenience attendong it. In cases of fractured bones I trust to bleeding without purging.

Nitre, Glaubers Salts, Salamoniac, and antimony has Some times been joined with them to create a Nausea & perspiration.

Mercury often acts powerfully in the cure of infl$^{n}$. 4$^{th}$ly Rest is of the greatest

importance, not only of the part but of the whole body - The room should be kept of a moderate Temperature -

The Local Remedies are, 1st bleeding by Scarification Leeches & Cups - but if a fever be caused by inflm General blood-letting should always be premised.

When the heat is very great, Cold air, Ice, cold water, may be applied, but should never be carried so far as to become disagreeable to the patient, else it proves injurious by acting as a Stimulus -

3d - Vinegar. Salamoniac. preperations of Lead, with, or without, Laudanum. diluted Spirits of wine - Laudanum alone &c -

4th Poultices. These are either Simple or medical - Simple as bred. & Milk the flax-seed Poultice &c, The medicated are the Simple Poultices mixed with the medicines above mentioned - Poultices are serviceable in inflm from contused (& Punctured) wounds -

5thly

5thly Blisters. These are of very great use applied directly over the inflamed part or in its vicinity. These should always be used when you are fearful in directing large evacuations, and they frequently render large evacuations unnecessary - They produce resolution by the evacuation of Serum - They are particularly serviceable in inflⁿ from Punctured wounds - Blisters are of use applied to the inflamed part when we are apprehensive of Tetanus

Of the good effects of adhesive Inflⁿ.

They are instanced 1st in the healing of wounds. 2nd in abscesses, The Cells of the contiguous cellular membranes are united by it wh prevents the pus escapeing from the cavity of the abscess and so stops the further progress of inflⁿ. 3d - Cysts are formed for the lodgment of extraneous bodies, as balls, Shot, Splas, &c 4th In abscess of the Liver or any viscus, the Pus in its progress to the Surface of the body is prevented from being effused into the

the cavity of the abdomen by the adhesion of the affected parts of the viscus to the Parietes of the cavity.

## Lecture 2nd

### of Suppurative Inflamation –

We come now to Speak of suppurative Inflm. If Inflm be not stoped by some of the means above mentioned it proceeds to suppuration. or if the adhesive state fails of effecting a cure by Resolution the Suppurative state takes place (vid Bell). Here the inflm acts by secreting Pus and the Suppuration wh takes place is a third remedy or mode of cure. The contact of air to internal Surfaces have been supposed to produce inflm. I once heard a Professor say that he thought the action of the air, occasioned inflm of the Chest in a case where the pleura had been punctured with a red hot Iron: notwithstanding the

violence

violence of the act he imputed the inflm.
to the action of the air. I once tried an ex-
perriment on a Cat in this manner; I made
an incision through the Pleura, through wh. I
pipd a tube & filled one side with air. I then
withdrew the Tube & closed up the wound. In
this situation it remained three days without
any remarkable alteration, it was then suf-
focated and upon examination no possible
difference could be observed between the
two sides. I mention this to shew that the
effects of air are not so noxious as are often
supposed & to prevent Surgeons from hurrying
too much in closing up a wound with a view
of keeping the air from its internal Surface.
That air to a wound is perfectly innoxious
was first proved by Mr. John Hunter.

When adhesive inflm. will not admit of
Resolution it goes into the Suppurative Stage;
This is characterized by an increase of
pain often attended with a throbbing and
Shooting

Shooting Sensation; the Swelling enlarges the parts become softer and at length a fluctuation is felt - there is at the same time an alteration in the color of the tumor from a deeper to a paler red, also rather a yellowish appearance on the most promi - nent part of the Tumor; It is now that may be termed an abscess or circumscribed tumor containing pus - Abscesses are often attended with Rigors wch are succeeded with fever & clammy Sweats, wch Symptoms are removed by evacuating the pus; If the pain be very great it may be relieved by opium and this more effectually if there be added to the Opium small portions of Emetic - a poultice of bred & Milk is usu - ally applied to the tumor in wh a prominent part is observable; and here an opening is generally naturally made by an absorption of parts beneath the Skin; however an opening is some times made by the Skin

and

and parts beneath loosing their Lepi & sloughing away, where this takes place it generally makes a pretty large opening. If the time of this natural opening be protracted too long it becomes necessary to make an artificial one. Several circumstances require this opening to be made early. 1. If the abscess be seated on the Thorax or abdomen. 2. if seated over any of the Joints. 3. if attended with great Pain as in Paronychia, The Pain of Paronychia may be almost immediately relieved by opening

In Suppuration attended with Hectic fever the constitution sympathizes with the Local irritation wh the power of the constitution is unable to over come, as when the fever is brought on by ulcers or affections of the Tendons & Ligaments or any of the Vital Parts. The Symptoms of Hectic are great lassitude. weakness loss of appetite, cold night sweats. aptness to sweat on very little exertion; the pulse small quick & frequent. Urine high

coloured

coloured, and deposits a copious Sediment and towards the close a Diarrhea takes place frequently terminates in Diarrhea - Cullen says that the Hectic fever in Suppuration is from an absorption of Pus. This is not the case for large bubos are absorbed without a Symptom of Hectic following them. If Hectic fever followed the absorption of Pus de-plorable indeed would be the condition of Mon-

The process of Suppuration some times suddenly stops and the matter already formed is absorbed - this is a happy termination and of course it is a desirable thing to find medicines wh will produce this effect - many Medicines have been employed for this purpose. Emetics & Nauseating Medicines have been known to produce this effect the matter formed in bubos has been absorbed by vomiting occasioned at sea - I have observed bleeding Blistering & Purging to be of service. Hectic Fever insted

of

of being induced by suppuration as frequently supposed is some times cured by its pro-
-mation. When the Hectic fever comes on from a diseased joint the amputation of the joint will cure the Hectic and it does not again accur, tho the matter from the stump be much more than from the diseased joint - The Hectic fever is some times relieved & even cured by Issues and these add to the absorption. These are convincing proofs that Hectic fever is not the consequence of absorption of Pus.

If Suppuration proceeds to fluctuation so that the matter may be distinctly felt, the opening should be assisted by making an incision into the abscess - It is very customary to apply plasters of different kinds to assist in breaking tumors containing Pus; such as Resins Sacharine Substances &c some any of these do good except by moistening the part, tho that applied next preceding the eruption generally

obtains

obtains the credit of accelerating the discharge I believe they act only by softening the part Blisters promote absorption by irritation - abscesses on the Cranium should never be left to open of themselves, such as impede respiration should be immediately opened - The Tonsils are sometimes so enlarged by suppuration as to impede respiration - They should always be opened under such circumstances - Matter does not always absorb toward the Skin e.g. in Tumors containing Pus: absorption does not always take place between it and the external surface of the body; but sometimes makes its way more internally, hence the necessity of opening abscesses when they form over joints, or over any cavity. I knew a Patient afflicted with a periodical pain in his head, wh afterwards was found to be owing to an abscess in the calf of the leg, upon opening wh the Pain ceased. I have twice known all the symptoms of nervous fever

produced

produced by a Small abscess over the abdom-
-inal Ring. In the first Case the Patient
died owing to the ignorance of the cause
of the disease. In the Second case the
abscess was opened and the Patient recovered

I have Known another Similar instance
of situated in the axilla -

Abscesses in the face should be opened
soon to prevent the deformity of the Scar that
would ensue by leaving it to open Spontaneously
as it would absorb much more of the
parts -

There are two ways of opening
abscess 1st by incision - 2nd by producing an
eschar by caustic - the first should be pre-
-ferred unless where the Timidity of the Patient
prevents it: in wh case a Thin Layer of
Lapis Septicus may be applied for the Space of
8 or 10 Minutes, the part wh it touches will
soon Slough off & give vent to the Pus -
after the Pus is discharged it is to be treated

in the

in the same manner as an ulcer

Pus when taken from a healthy sore is a light straw coloured fluid of the consistence of cream, containing a number of globules, it does not coagulate by heat if exposed to it but evaporates to dryness; it does not readily Putrify - it is specifically heavier than water and not readily miscible with it; it is not corrosive - it is said to be of a sweetish taste; it is distinguish'd by the other fluids of the body by its contain-ing globules of a peculiar color wh are suspended in a fluid coagulable only by sal-amoniac, wh is not the case with any other animal fluid - Mr Hunter has observed that it is a secretion of the vessels taking on the nature of glands and that the globules are not formed till after it is thrown out of the vessels - when practicable suppuration should be obviated by Resolution.

The time necessary to form pus is different according to different circumstances - I have

known

known it formed in the Urethra in five hours after passing the Bougie.

I shall now say a few words on

## Ulcerative Inflamation.

Ulceration takes place mostly after suppuration; and Suppuration takes place after the extraction of dead ulceration - In ulcerative inflamation a part is always lost, this is removed by absorption. It commences mostly after the suppurative stage, but has been known to preceed it, as in cases of Chancre & as in some particular irritations or where sudden death of a part has taken place. Prepure has produced this stage without suppuration. That part of the body ulcerates soonest wh is nearest the surface - the absorption of the parts in ulcers is always attended with Pain & inflex wh is called Soreness; but this is not a necessary symptom of ulceration; for we find that Scrophulous ulcers are not painful when they proceed

Slowly,

slowly, but when rapid they are attended with great Pain –

We shall next proceed to abscesses of Particular Parts and first of

## Mammary Abscesses.

Remarkable instances of ulceration attended with inflamation occurs in mammary abscesses of women. There may either be seated in the glandular Parts or in the cellular Membrane. It seldom affects the whole gland at once If part of the glandular substance be diseased the secretion of Milk is commonly diminished: but if the whole of it is affected the secretion is suspended altogether – but when the cellular membrane is alone affected the secretion of Milk is not much diminished – In abscesses or infl.n of this gland, the Breast becomes stiff swelled and Painfull; shooting Pains extend to the axilla they are mostly preceded by a chilly fit accompanied with pain of the affected part. the Milk runs off in small quantities & the

Patient

Patient is seized with rettlessness & Fever
There is sometimes more than one tumor
felt. Women are subject to infl^n of the
breasts as long as they suckle, but the
time when this disease most prevails is
three or 4 Months after Parturition - These
cases we seldom or never see till they have
arrived to a considerable degree of soreness owing to
the woman supposing herself quite competent
to the cure, tho they always fail in their
attempts - Altho suppuration is generally
the result of infl^n of the Breasts, yet I have
seen it terminate in Oedema and the swelling
is sometimes so great as to hide the Nipple
the pain in these cases is very intense.

When the adhesive infl^n takes place
the coagulating Lymph is sometimes thrown
out without being again absorbed after the
infl^n has subsided, this forms an indurated
Gland or Schirrus. I have seen them of
various sizes; some as large as the fist -

There

* Some times there is no evident remote cause

There are no ways cancerous because they have yielded to the antiphlogistic regimen -

These affections are frequently owing to mechanical causes as tight dress, &c and to over straining the vessels by long distention with Milk - They are some times produced by the persons taking cold.* In those cases where the gland is indurated they seldom return to their former size - Some times the glands are very much reduced in size & never secrete Milk -

Treatment. If called in the forming state bleed according to the strength of the Patient exhibit a Mercurial Purge, & put the Patient upon a strictly vegitable diet - The breast may be anointed with warm oil - if it be convenient for the Patient to be confined it should be done, if not support the breast by putting a handkerchief around the Neck - if inflm continue bloodletting should be repeated, and application of Leeches to the part

will

will be found of great utility, Bread & Milk Poultices, with lead water, are highly serviceable and should be applied cold after evacuations have been prescribed. If these do not give relief & the inflm continue: a Blister should be applied first on one side of the Breast & then on the other - A great variety of Plasters have been used and are often recommended; but I believe they are all of doubtfull efficacy - The blister is not so painful as might be expected; I have known women who had not enjoyed rest for many Nights before to sleep sound while it was operating. But be sure to keep up the evacuation per Annum.

An application of Salomonia & vinegar is frequently advised. It is however of no use. Suppuration seldom takes place if properly treated from the commencement of the disease, but sometimes from delay in calling in a Physician, or from injudicious

injudicious Treatment, it does occur-

If it becomes necessary to open the abscess, it is some times advised to do it freely by making a large Slit by incision; but I have succeeded by making a puncture into the abscess, and introducing and introducing a Bougie to keep it open - The bougie must be chosen occasionally to void the within collected fluid or Pus - In the case of Oedema I applied Salamoniac Mercurial Ointment &c to the parts & depleted generally by bleeding Purgin &c and without any effect. The application of Blisters removed the complaint -

I removed the swelling of an indurated Gland (attended with slow fever wh was afterward cured by bleeding & the antiphlogistic regimen) by blistering and afterwards dressing with mercurial ointment where the Scirrhus was as large as the fist - Mercurial ointment is good in resolving tumors -

Weakness in the Joints especially the hip

Joint

faint without any apparent cause is generally a species of infl.n wh may be cured if taken in time by purging - Swellings are occasioned by a secretion or throwing out of coagulable Lymph into the cells of the cellular membrane - Vessels wh are inflamed carry a coagulating Lymph wh adheres to their internal coats and becomes vascular itself -

☞ N.B. the reason of the shortness of the Lectures delivered by Dr Physick was that he spent as much as one third of the hour devoted to his Lecture in questioning his pupils on the subjects of the former Lecture and recapitulating it -

Lecture -

# Lecture 3d.

## of Paronychia

Paronichia is a violent inflm occuring mostly at the ends of the fingers, wh frequently ends in suppuration. It is attended with trifling or excruciating Pain according to the seat of the disease. Paronichia may be divided into 4 kinds - 1st when seated in the Cutis vera. 2d in the adipose membrane under the Skin; here the pain is much greater and matter is frequently effused under the Nail - The whole finger becomes swelled & painfull - 3. In the theca of the Tendons & 4th in the Periosteum - In this last case the pain is very great tho without swelling at first - when it takes place in the adipose membrane there is more danger then of Mortification taking Place - The matter formed in these two last species of Paronichia has some times passed along the

course of

course of the Tendons under the Ligament of the wrist; and formed a tumor at the lower part of the fore arm - The bones often becomes carious & the tendons some times slough away.
I have seen Mortification from this cause.
It is a difficult matter to point out the causes of Whitlow. I have seen it in one instance produced by the bite of a Squirrel. They are likewise produced by nobs running through the hands, as in Sailors. Puncture of Needles &c into the periosteum — In the treatment of Whitlow there is not much to be done in the first kind, and requires but little attention. It may be opened and dressed with unguentum Citrinum or Simple Cerate containing Sacharum Saturni - When it is situated deeper than the Skin make an incision down to it and if any part of the bone be decayed it ought if possible immediately to be taken away - The dressing may either be dry lint or a poultice -

Boiling

Boiling water has likewise been adduced in cases of Paronichia. I believe when it is of any use it acts merely as a rubifacient.

Where the matter lies beneath the Periosteum and the Bones become carious & sloughing takes place: the matter should be evacuated and the carious bone removed if practicable if the matter should travel along the course of a Tendon; a longitudinal incision should be made before the injury wh might result comes on - If matter have traveled up the vessel it should be let out at the most protruding part. Sometimes if the orifice is small it grows up with fungus and prevents its healing. For destroying this excrescence, eschoratics will be found tedious and often in vain. It should be remedied by enlarging the incision -

of

# of the Psoas Abscess

This disease is seated in the cellular membrane under the Psoas Muscle; where matter is deposited in the cells of the cellular Substance any of the remote causes of inflamation may produce this disease - In its progress to the Surface of the body; it generally follows its course down along the Bones.

It generally causes Pain at first in the Lumbar regions, but it sometimes goes off without causing any pain for three Months - The Thigh on the side affected is weak, the Patient cannot well stand - he generally bends the body to relax the Muscles on the side affected, he can not well rotate the Thigh, and is affected with rigors It some times happens that months elapse before any one mark of it can be seen Its Situation is anteriorly - It is not always the Same - It some times comes on the Loins

and

Loins and I have seen it form on the Buttocks

Some times the tumor is situated on the upper part of the Thigh, Some times at the Lower. The Integuments over the abscess are not discoloured - The Tumor is most tense when the Patient stands upright when lying down it is Soft & forced. If Pressure be made on the abdomen it will be flattened and be more protruded in the Thigh & vice versa - Laughing & coughing render it more tense. The fluctuation may be readily felt.

These abscesses never open forward into the cavity of the abdomen but have Some times destroyed the Sides of the contiguous Vessels, and thereby produce fatal Hemorhage - if they continue a long time they may occasion a Caries of the Vertebra. when it protrudes at the upper part of the Thigh, it appears like Hernia. it has also been confounded

with

with Fistula in Ano

Treatment, if we are called to see the Patient in an early stage of the disease, we must keep him at rest, and he must avoid all animal food. bleeding Scarifications on the Back, and Leeches also are of Service, Purges. & cause the Patient to Lie on his back. a little blister should likewise be applied to the upper part of it, Issues on the Loins.

When the tumor has formed externally it has been disputed whether the abscess should be opened or not. and Some authors are afraid to make an opening into the Cavity; but where it is long in opening it puts the patients life in danger, if it be left to open it self. Mr Hunter has observed that all cavities will inflame if opened unless they unite by the first intention. he observed that the inflm would attack every side of the Cavity; wh is the cause of all the Symptoms wh follow.

Mr

Mr. Abernethy no doubt taking the Idea from Mr. Hunter, has proposed to open it so that the sides of the wound may unite by the first intention. He has proposed to perform the opperation with a Lancet, the punct-
-ure to be made in the Longitudinal direction of the fibres. first to make one inscision through the Skin, then push the Lancet obliquely through into the abscess, by this meanes we make a valular opening. we should use no probes nor any thing to ascertain the depth of the Sinus because they would irritate the part, and when the matter is discharged bring the ~~sides~~ edges of the wound together with adhesive Plaster — after the matter is discharged a few times in this way, it may be opened with the Lancet freely, without any danger as the sides of the Cavity will be brot together and so closed as not to become inflamed. This is the best method of treating the abscess. I have

tried this

Plate H

tried this method my self, and find it to answer very well, altho I have never been able to succeed in affecting a cure, because all the cases I have seen have been attended with a caries of the vertebra, However very unfortunately the puncture does not always unite by the first intention, and when this does happen, the infl.n wh was spoken of before, and wh is the fatal cause comes on (case related)

Besides the different inflamations before spoken of there is some others and first of

## Erysipelas

This is an infl.n of the cutis vera, It some times begins in the fore arm and spreads over the whole body. It is frequently preceded by shivering wh is followed by a hot fit. The skin is of a light yellow in some cases; and a dark

copper

copper like appearance in others; if you press it with your fingers the colour disappears; but on removing the pressure the colour returns. The pain is not acute, but burning & Itching. The inflm is often much diffused, frequently spreading in one part, while it subsides in an other. The suppuration is less than the adhesive inflm and differs from the adhesive inflm (in wh coagulating Lymph is thrown out) by an extravasation of Serum, wh is thrown out frequently into cells, wh form blisters on the surface - when the inflm extends to the cellular membrane gangrene is often the consequence, because the Membrane is unable to assist in the union as in adhesive inflm - when Erysipelas attacks the face the Eyelids become swelled so as entirely to preclude light. The suppuration is shining & of a copper colour. it forms pustules wh when they break

excoriate

excoriate. Suppuration sometimes supervenes running from cell to cell in the adipose membrane causing death in the part - when Mortification takes place in the cellular Membrane it is discharged in flakes like wet tow, and is very offensive. This is mostly the case when it is situated about the .....

When Erysipelas terminates favorably the Vesicles fall off in dry Brownny scales wh takes place from the 18 to or the 12th days during the progress of this complaint the whole skin & inside of the mouth is very dry -

Causes. The causes are so similar to those wh excite common inflm. I shall not enumerate them. It some times comes on spontaneously without any apparent cause -

Cure. In England bark is the Cure.

The

The cure is much the same as in common infl$^{n}$. It may generally be removed by attending to the antiphlogistic regimen before suppuration takes place. but when suppuration supervenes it must be opened early to prevent its escape into the cellular mem=brane. Poultices and emoliants before suppuration takes place certainly do harm. The application of a blister so that it shall be partly on the sound & partly on the inflamed part is of great service and I have applied blisters in many instances over the inflamed parts with very happy effects. When it extended over the face I applied the blister first to one side then to the other. (Dr. P. mentioned a case of dreadful Erysipelas infl$^{n}$ of the leg & thigh being cured by the application of Blisters over the inflamed parts.) The inflamation generally terminates in about five days —

Edema

## Oedematous Inflamation

Oedema exists in the Skin tho it may be scald under. It is probable that this and the adhesive infl^n are originally the same, but taking place in parts disposed to dropsy. It is attended with a smarting burning sensation, and in some cases with cold chills, with a coldness of the extremeties, and in some cases with violent infl^n. I knew a woman in whom it terminated fatally by producing Lock jaw.

Cure The usual Remedy is the application of Brandy, or bread & Milk poultice mixed with it, or with Saccharum Saturni wh is more useful than any thing else.

I once had a ~~case~~ Patient of Oedema aged 36, I punctured him at the Knee. many purple Spots come on, the parts sloughed & left the Knee Bare, his life was saved by amputation & the Local application of Brandy.

Burns.

# Burns & Scalds

The morbid effects produced by the application of heat, differ according to the intensity of the heat, and the time of its continuance

Its effects are first, when the degree of heat is low, a redness only of the part affected 2. Vesication causing a Seperation of the Cuticle, attended with an effusion of Serum - 3d the Death of the part forming an Eschar by the caustic - by this is destroyed, the Skin, adipose Membrane, Muscles & Soft parts of the bones themselves & the ulcer is Similar to that made with an eschar. The heat of a burning coal or of any of the Mouldon Metals will produce this effect, Some times the bones are discharged by the application of heat and it frequently terminates in Death - when the life of a part only is destroyed, the patient does not feel any very great pain after the first effects are over, till after 3 or

4 days

4 days, when the inflamitory process of sloughing takes place for the restoration of the dead part. I saw a little boy who undertook to walk the Edge of a caldron wh was full of very hot water in a Soap Manufactory, when his foot sliping he plunged into the midst of it. he was wet nearly two thirds over, and his Clothes keeping the heat to the hart a considerable while he was very much burned. His Pulse was scarcely perceptible, his extremeties Cold, & a heavy drowsiness prevailed. He was very restlys & kept constantly changing his position. He did not speak unlys when asked a question and then he answered very rationally, & when interogated respecting his feelings, he said he felt no pain. He died in about 6 hours. When these symptoms are pro= =duced by fire the patient seldom if ever recovers

In judging of the consequences, we must consider the extent of the injury and age

& age of the Patient, as burns are more dangerous in young & old than in Middle aged people. Mortification frequently ensues in old People - Burns affect old peoples the most, tho they prove fatal at times to all ages - If but a Small part be affected or its depth not great, there is no danger. a deep burn if it be of Small extent, or Spread but little, is but a Small injury; but if it be of great extent tho, very Superficial it is extremely dangerous - When burns hap=
=pen on the head they Some times accasion inflⁿ of the Dura Matter - Burns accasioned by any of the Moulton Metals appear of no Serious consequence at first, but after Some time the Skin & Vessels Slough off and bare the bones bear; hectic fever ensues & the Patient dies - Burns accuring over large Joints frequently accasion very alarming Symptoms; Hectic fever comes on & ampu=
=tation is absolutely necessary for the recovery

of the

recovery of the Patient.

I consider inflⁿ resulting from burns differing from all other inflamations, in the first place the pain is of a different kind from that of all or any other inflⁿ being of the burning, smarting, kind. Second, in not being capable of resolution, and causing ulceration of the parts underneath, wh throw up fungus granulations that are very difficult to be suppressed. 3ᵈ the cicatrices formed by ulcers resulting from burns, have a disposition to contract much more than other cicatrices not the result of burns, causing thereby a much greater deformety of the part affected. 4ᵗʰ, They are cured by totally different remedies as valat. alkali, Spts Turbᵗʰ &c.

Treatment. The Remedies employed in cases of Burns are very numerous, they are either general or Local. Most authors advise depleting remedies in Burns indiscriminately; but they should not be used unlss fever and

and great inflm. supervene. If the burn be extensive and great weakness attends; the patient may be supported by Port wine, & even Brandy. & water. he should have any nourishing aliment he can devise. If the extremeties be cold apply Sinapisms. If from this invigorating plan of treatment, inflm. and fever should supervene, bloodletting & a more sparing diet would be necessary.

The Local Remedies generally advised, are cold water, Soap Suds, and Mr. Earl in a small treatise recommends Ice above all other remedies applied to the part. I have found very happy effects from the early use of vinegar & water. Lime water & oil, these form a Crust like a cuticle equal parts of linseed oil & Lime water. and the common people use Scraped Potatoes.

Some have used water with as much common salt as can be dissolved in it as a local remedy. of Late very stimulating applications have

been used

It acts specifically, like Mercury in curing the Venereal disease -

used as volatile Spirits. Spirits of turpentine &c. Lately Mr Kentish has used Spirits of Turpentine combined with Basilicon & I have used it with very good effect in many cases. Excessive heat forms a disease different from common inflm; it may be called burning inflm, and we find that burns can be cured in a Short time by Such remedies as will increase inflm but the common local applications oil cold water &c possess very little power in altering the inflamitory action of the burned part, the most of these remedies as cold water &c act only as palliatives relieving the pain and Soothing the parts for a while. but the Turpentine & Basilicon Spread on rags and applied, is a permanent application and very useful. Valatile alkali & Vinegar are good applications, and I have used vinegar with very good effects. When the Spirits of Turpentine is applied to any Pendulous part

great

great care must be taken, that it does not touch the sound parts wh will produce in them infl^n pain & swelling - if for instance you apply it to the finger put something between the discoved and the well parts - When the hand and fingers are much burned it ought always to be dressed with splints to keep the hand & fingers extended; & the fingers kept from each other. The splint will prevent the new granulations from forming in a contracted state as is apt to be the case in Burns, and the fingers from uniting with each other, I knew a child who was burned in this city whose hands in consequence of injudicious treatment were healed in such a manner as to require a difficult & very painful operation to to dissect the fingers from each other, and from the palm of the hand - We are frequently not called to cases of Burns for several days after they have happened, and a number of applications

have

have been tried. I have applied the Turpentine & Basilicon when not called till three or 4 days after the accident - In one case of a burn of a Child, the Turpentine & Basilicon was applied, but owing to the Superstition of the parents, together with the Clamours of old women, it was omitted for 3 or 4 days without my knowledge; the Child become worse and a fungus arose over the surface of the burn, I was sent for again, and the part was sprinkled with burnt alum, and the Turpentine & Basilicon were again applied wh soon cured the Patient -

In the case of a Patient who was burned with gun powder, this medicine was used, the pain entirely left him in about 4 hours after the application of the ointment. However he presently complained of pain in his little finger, wh upon examination appeared not to have any of the Turpentine upon it, and upon its application to this part, the pain quickly

ceased

ceased, the inflm. subsided and he was soon cured - When an ulceration takes place they are generally difficult to cure; but I have found that the Turpentine & Basilicon cured them very readily

Inflamed parts when in contact are very apt to grow together, so that we should be extremely careful to keep the dressings between inflamed surfaces wh are in contact with each other while they are suppurating and granulating, otherwise the parts will adhere by the union of granulations as in the case of the Childs hand wh I first menti oned - I knew a case like this of a gentleman in this City, who in consequence of a burn with lead treatment, had the Tarsus of his Eyelid grow to the superci=
=iary ridge; he has been partially relieved by an operation, but is not able to shut his Eyes, a considerable opacity is formed over one &c

There

There is a girl now in this City whose Chin after a burn was suffered to unite to the breast, and the underlip to the Chin; the Saliva ran involuntary down her Chin. This case Dr Dorsey & myself partially relieved by two opperations; but she is still an awful witness of bad treatment. I once knew a young man at Georges Hospital in London who in consequence of a Scald & bad treatment had the Scrotum adhere to the Thigh and the Penis adhere to the Scrotum, so that there was Scarce a vestage of a penis to be seen the Mother of the Patient was satisfied with this cure; but the boy at the age of 18 appears at the Hospital to have this important part set at liberty. With much care & very nice dissection they set at liberty about an inch & a half to the no small satisfaction of the patient - I mention this Gentlemen that you should be

extremely

extremely cautious in dressing to keep the parts as natural as possible.

The contraction of the cicatrization of burnt parts sometimes form a ligature round the Limb, stopping the circulation of the blood & thereby producing Mortification, when ever this circumstance takes place the band should be cut open —

## Lecture 4th

## Mortification

This is complete death of a part. Gangrene is that State of the part wh immediately pre=ceeds Mortification —

It is of two kinds, 1st Inflamative or that wh is preceded by inflm. 2d Debilative, or that proceeding from Languor without inflm. The causes of the first are violent contusions and the application of violent degrees

degrees of heat, or Cold, &c. 2. The distruction of the circulation of Blood in the hart, either by pressure or by tieing the principle artery. They both opperate in the same way by cutting off the necessary supply of Blood.

When a hart looses its life by Mortif^n the colour is changed, first becomming purple, then Livid, and lastly black; while the heat & sensibility are lost. The Cuticle seperates with an effusion of Bloody serum, & emits an offensive Smell. When the Mortification is small, a small thin Poultice of bread & Milk to keep the parts soft, or a charcoal Poultice may be continued till the parts seperate. In cases of Violent infl^n, debilite, but a small degree of infl^n is Salutary. Opium should be given to relieve the pain; and when the constitution sinks from the beginning Bark and wine should be used freely.

Intense cold, if not severe enough to kill produces first a palenes of the exposed part wh is succeed=

ed

succeeded by redness, it is then changed to a purple with tumefaction & great pain and is attended with a burning sensation and soreness of the parts affected; if the cold is continued it loses its sensibility and at length dies - Snow or fresh spring water should be applied to the affected part; after wh the warmth of the part should be grad=
=ually increased to a comfortable state.
under these circumstances heat suddenly applied would destroy the part.

Mortification often comes on without any apparent cause. Of Mortification preceded by infl$^{n}$ there are 2 kinds. The first is when the inflamatory action is too great for the powers of the part to support. In the second there is some thing peculiar in the nature of the inflamation, so that the inflamatory action does not seem to produce its destroying effe=
=cts by the degree of violence - Wine injected into the cellular membrane of scrotum by a bungling operator on the Hydrocele, has produced infl$^{n}$ and Mor=
=tification of the whole cellular substance and bottom of the scrotum, wh by being destroyed sloughed, and the whole of the cellular Mem=
=brane came away with an intolerable factor.

The escape of ..... into the cellul substance has produced the same effect.

Mortification there

There is a Species of Mortification, described by Mr Pott wh begins without any apparent Cause at the ends of the Toes, (of old People especially) It commences with pain & Slight inflam= of a dusky red colour, gradually extending up the Legs - Vesications sometimes take place round its edges, but not always. The progress is for the most part Slow, but in Some it is rapid & very painful - the upper part of the foot Swells & the Cuticle becomes detached.

I have known it arise from the prick of a knife in cutting corns. The Remedy is opium and keep the parts with soft bread and Milk Poultices - all Stimulating Medicines as the Spts of Turpentine essential oils &c, Should be avoided.

Never make Scarrifications nor apply Stimula= ting Substances to assist in throwing off the Slough for when Mortification ceases the parts will Slough off without any assistance. Blisters Should not be applied to this kind of Mortif= ication, for whatever irritates or Stimulates the parts increases the disease; and bark in this case is of no use. It has been advised by Some to amputate in this Disease, but it Should never be done while Mortification is progressing - If it is done the Mortification will

will attack the Stump recommence in the Stump and death will ensue, while you subject the Patient to much unnecessary pain. I once performed an operation at the correct solicitation of the patient while the Mortification continued. It was performed a little above the ancle - the arteries were completely opified, so much so that I was obliged upon tying them, to mash their surfaces together with my thumb & finger to prevent Hemorhage, a circumstance wh often occurs in such cases - for 4 or 5 days the Man appe=
=ared to be doing well but on the 5 day the Mortification began in the Stump and the Patient Died - By no means attempt to cut any of the dead parts from the living this inj=
-ures the small vessels and granulations above and is frequently a cause of extending the Mortification - The best way is to let the dead parts slough off, when the Factor is extreme it may be corrected.

To know whether there is Life in the affected part I have frequently pressed upon it with my fingers wh if living will become white, and upon removing the fingers the colour will grad=
ually return according to the action of the Vessels in the diseased parts - but if Death has

* Purges antephlogistic regimen &c

has taken place the vessels will not empty themselves by pressure.

Pressure often occasions mortification in parts contiguous to the Sacrum in persons who are long confined on their backs from broken bones and other causes, and is most commonly preceded by infl$^{n}$. I have seen Mortification produced in the arm by pressure of the bed clothes. In some cases the pressure of an Aneurismal Sac has produced Mortification When from this cause there is no way to save the parts below the Sac, the only thing to be done is to keep up the strength of the Patient with Bark Wine &c

When the inflamed part is about to mortify it is attended with a burning Pain, a purple colour wh grows deeper & deeper till quite black - a Tumefaction takes place wh readily receives the impression of the fingers - Small blisters, containing a thin acrid Serum arise around the Edges, and as the disease advances this Serum becomes mixed with the red globules which are thrown out.

The Remedies for Mortification are general or Local, The general Remedies are Blood-letting* if infla$^{n}$ be present, but if it proceed

from

Languor or debility of the parts (If the Theory I have advanced that the disease depends upon too much action be just) Then all Stimulating applications as essential oils, balsoms, cordials, Opium with Nourishing diet Bark &c – if the Patient be accustomed to the use of wine it may be continued to a certain degree in every instance. but in all cases you must be governed by the State of the System

If Mortification arises from weak action Tonics must be used, Genson, with Orange peel makes a very agreeable Tonic. Support the System every way; this is done by Supporting the Tone of the Stomach, Cordial diet, with Opium to relieve pain – as Much Bark as the Stomach will bear, and wine, and if the patient has been accustomed to Strong drink it should be continued.

The Local Remedies are 1st Removing the exciting causes, and evacuating acid Fluids, Blisters to the parts affected Poultices &c –

The progress of Mortification can not be checked by the Local application of Antiseptic Remedies these Substances do not act on the living as on Dead animal Matter as Antiseptics – I do not know as the fermenting poultice of

Charcoal

Charcoal is of any use, except in preventing the Smell of the dead parts, I agree with Mr Pott however in recommending the application of bread & Milk Poultices wh keeps the living parts soft but I have always found that a blister applied to a part about to Mortify to be the most sure Remedy in arresting its progress. In the course of My practice I have been very happy effects from the use of blisters in all most every case - but this can do no good when Mortification proceeds from want of a supply of fresh blood in the diseased part, unless applied above the obstruction to prevent its progress above the obstruction. Where Mortification ensues from Erysipelas in the Cutis Vera and Pus has made its way into the cellular Membrane, it should be laid open freely, & Treated with bread and Milk Poultice.

In Mortification of the Leggs pressure should be avoided for this purpose the Leg may be supported by pillows placed under the Thigh

I have been long in the habit of using Nitric acid diluted with equal quantity of Water; it corrects the fator by stoping the putrefactive process, it may also stimulate the absorbents to a quicker action, and cause them to seperate the

Dead

Dead parts more rapidly. It should not however be applied too near the living parts or it will cauterize them: If the weather be very warm Maggots are apt to form in the dead parts, but washing it with this diluted Nitric acid will remove them

## Carbuncles

The Second Species of inflamation is that peculiar kind wh produces Carbuncles; They are circumscribed broad hard Tumors. They begin in the Skin like pimples, are of a dusky red colour with pale edges, attended with burning Pain. a kind of Suppuration takes place in the cellular Membrane but good healthy pus is never formed - They occur on the back and Sides, and most frequent in people who have been accustomed to high living. and are dangerous if large & Numerous - They same time tho very rarely occur on the head. and in this case they are extremely dangerous if they are numerous; much however depends on the strength of the constitution.

A Case of Dr Wistars will serve to shew the peculiarity of this kind of inflm. He was called to a Man between 50 & 60 years of age, in consequence of one of these Carbuncles on his Leg, a circle of inflm surrounded the Tumor, he was called

about

about three days after the commencement of the Disease. after trying a number of Remedies - Dr. Mungeo was consulted, who said he was well acq=uainted with them in France, and had cured several of them by scarrifications; accordingly it was scarrified transversely about 1/4 of an Inch apart all over the Surface, and then a circular incision made all around; this effectually cured it. It apperated by changing the mode of action to the adhesive inflamation.

Same years ago I was led from the un=certainty of Remedies employed in Gangrene; to seek for some remedy more certain and effectual in its apperations, from the good effects of Blisters in many affections, I was ~~led~~ induced to try them in Mortifi=cation, and they succeeded beyond my most sanguine expectations. The good effects of Blisters may be seen in the Case of Capt R. R. related in the ... Volume of Dr Cox's M. Museum who under Mistake had used persevir in a common after accurence of Life, in consequence of wh a Violent inflm ensued in the Regia ani and the Scrotum. The antiphlogistic Regimen was tried but without any benefit, and he was in the most dangerous State, and after resisting Bark and other anteseptic Remedies, it was cured.

cured by the application of Blisters to the parts affected. The pain in Mortification is caused by Inflamation and Spasm of the Vessels. A patient of Mine was affected with Violent pain in the foot; a Small redish Spot was Seen on the Sole of it, appearing at first like Ecchymosis, wh afterwards disappeared, and then came again a little above the ancle. The patient now complained of great pain when the foot was raised up, but wh was Some what abated by letting it down, owing to the diseased action of the Vessels, because the blood filling the Vessels overcome the Spasms that were the cause of the pain, for when the foot was raised, the Vessels were emptied of the distending blood and the convulsive action of the Vessels took place. A Charcoal poultice was applied over his foot. His bowels were disordered from taking too freely of Laudinum, wh was abviated by a purgative. The bark was given largely to the extent of half a pound in 24 hours, but without any good effects. Applications of Bark & brandy were made over the Stomach, and 5 grs of Val Alkali given every two hours —

The bark was now omitted as it was found to be of no use. Some Sena & Manna was ~~given~~ given to abviate Costiveness. The Mortification

Still

still increased - a blister was applied - wh stoped the Mortification and changed the livid colour wh passed to a red under the blister - the fermenting charcoal poultice was omitted, and another blister applied just below the first on the limb wh was of a dark colour & cold, the dead parts was washed with the Solution of Nitric Acid - the Mortified parts after this gradually sloughed off and the Patient is now recovered —

When Mortification is caused by inflm it yields more readily to Blisters than any other remedy. Blisters have lately been found as effec= -tual in the Cure of Carbuncle as any other kind of inflm, especially in relieving immediately that distressing burning Sensation. I lately cured one in the Back of a Lady as large as a common peate; wh she compared to a warming pan of hot Coals. The Sensation was very distressing: as soon as the blister was applied the Mortification ceased the dead parts sloughed in a few days, and the sore healed kindly. I have never had an opportunity of seeing a Carbuncle when forming; but I have no doubt but a blister would always stop their progress if applied in their forming state

Mr Winters Theory of Mortification I believe is

is now pretty generally received. That is an increase of action beyond what the powers of the part can bear. But I am rather inclined to think that in every Species of Mortification there is Some thing peculiar leading to the Death of the part, Some thing more than the Violence of the inflamatory action, for if it depended on the Violence of the action alone, the application of a blister wh is highly Stimulating, aught to produce the death of the part more quickly, by producing a still greater increase of action: but on the contrary they effect a Cure, I believe by altering the disposition and by changing the mode of action from the diseased to the healthy kind.

Lecture

# Lecture 5th

## of Wounds.

A Wound may be defined a Seperation of exter=
=nal parts by mechanical action - They differ
according to the Situation of the part injured,
and the instrument by wh the injury is Susta=
=ined

There are 2 kinds of wounds first inscised &
Second contused. An Inscised wound is made by
a clean Sharp cutting instrument -

A Contused wound is always accompanied by a
bruising of the Soft parts, and is divided into 3
kinds viz. Lacerated. Punctured, & Gun-shot
or penetrating wounds They are always attended
with a grater or less effusion of blood.

In Inscised wounds there is a greater effusion of
blood than in any other wounds, because no
injury being done to the Vessels beyond the
Section, its power of continuing the circulation
remains the Same and much blood is given out -
while in contused wounds the Vessels being bruised
and Killed, the blood from the Stimulus of Necessity
coagulates & forms ~~a~~ plugs. In Lacerated wounds
large Vessels are often divided without any consid=
=erable

=able Hemorhage, here the dead matter at the ends of the arteries caused by the contusion act as a Stim=
=ulus to the coagulation of the Blood (he relates a case from Cheselden) I once saw a case where a boy had his arm ground off in a Mill between the elbow & Shoulder; in this case scarce any hemor=
=hage accured, owing to the contused ends of the arteries causing the blood to coagulate in their ex=
=tremeties, and forming plugs wh Stoped the Hemorhage

There are three ways in wh Hemorhage may terminate in contused wounds, 1st by a diminished power of its circulation - 2nd by the Coagulation of the blood forming plugs, 3d by prepure caused by the effusion of blood into the Cellular Membrane wh prepsing on the sides of the Vessels, lessens their diameters. Bruised parts can not bleed much, the Hemorhage is Stoped by the bruise causing the coagulation of the blood. The coagulation takes place first round the edges of the Vessels. Contu=sions by the Violence of the prepure causes the death of the ends of the Vessels.

In Incised wounds the first thing necessary for the Surgeon to attend to, is to prevent the further loss of Blood. The Hemorhage some times is very great, but not unfrequently a Short time after the injury it Spontaneously ceases, a

Coagulation

coagulation is formed, and as it were a plugging up of the ends of the Vessels, if this be not the case it may some times be stoped by prepare made by the fingers, but should this fail a Torniquet must be applied above the wound - if on the arm the Torniquet must be applied above the Elbow; and if the wound be below the Knee, the prepare will be more effectual if it be applied on the Thigh because there being but one bone there, the prep= = are will be equal - a compress, or Pad must first be applied over the femoral Artery. The Hem= = orhage being stoped, the part must be washed clean with warm water, and Search made for the bleed= = ing Vessels ~~if it be large~~ wh being found, they must be drawn out with a Tenaculum and Secured by Ligatures. It is necessary to tie both ends of the bleeding Vessel if it be large; unless this be done the anastomosing branches will kick up the Hemorhage. When an artery is divided in the body so that it can not be got at easily, it is necessary to keep the Tenaculum along with the finger (after previously tieing a Simple Knot over the finger & Tenaculum) till you come to the bleeding artery, as Soon as you get hold of the bleeding Vessel, Slip the Noose over it and Secure it. In cases where the Tenaculum can not be used, where the vessels have so retracted that we can

not

* On passing a Needle around the artery keep the broad Side of the Needle toward the Vessel to prevent injury to the Vessel.

not see their orifices, recourse must be had to the Needle passing it around a portion of flesh tying it up altogether*. If the orifice of the wound be too small enlarge it with the Scalpel, but this does not often happen - If an injury is received on the upper part of the arm, the Tor=
=niquet can not be applied - here compression with the finger may be made on the Subclavian artery, just where it passes over the first Rib, or if the injury be done to the upper part of the Femoral Artery pressure may be made on the groin just where the Artery passes out of the Abdomen - Some times pressure may be made above the wound long enough for the formation of a plug, or a coagulum in the extremity of the divided Vessel, and so put a stop to the Hemorhage. It rarely happens that all the methods for restraining Hemorhage fail but this may occur when the vessels are divided in such a situation as not to admit of this kind of treatment, as the extraction of Tumors from the mouth & Nose wh are supplied with several arteries. If only one Vessel be divided the Hemorhage may some times be stoped by holding a compress of lint for a few minutes on the bleeding orifice. When there is an ozing of blood from the wound it may be restrained by a compress

of

of Lint with dry flour - Coal pulverized, dry Sponge, agaric. Spirits of Turpentine, Sach: Saturni; Blue Vitriol Vegitable astringents &c. But if these are insufficient we must have recourse to the ancient but Severe method of actual Cautery with a hot Iron

We Some times find that where the Vessels are injured if the external communication be Small that the coagulation of blood will Stop the Hemorhage - I Saw an instance of this kind where a boy in Gramaling with his School fellows, received a wound in the hom with a penknife, the imme= = diate consequence of wh was an effusion of blood into the cellular Membrane of the muscles, causing a considerable Tumor & great pain - the whole calf of the leg was very much distended - in this Situation he walked home increasing both the pain & Tumor; he went to bed & next morning both pain & Tumor were gone - Supposing him= = self well, he got up dressed himself & went down Stairs when his tumor immediately returned, he went to bed again & the Tumor Subsided - This alternation was experienced two or three times - at this time I was called and immediately pronounced it a wound of the popliteal artery, ordered the boy to keep his bed

and

and raised the Limb to take of the pressure of the blood by its gravity - The Valume of blood was considerably lessened by two or three bleedings. In about a fortnight he was quite well. In such cases no probe should be used to ascertain the depth or situation of the wound, lest you destroy the plug formed in the orifice of the artery and bring on hemorhage - The practice of some Surgeons of stuffing the wound full of lint is a very injurious one & aught to be avoided, lest you tear open the Coagulum wh Nature has kindly formed.

After stoping the Hemorhage bandages, adhesive plaster, or Sutors must be had recourse to for approximating the edges of the wound, and if the injury be done to the extensors of the Limb it may be necessary to apply a long Splint to secure the Limb in an extended position. In most cases the adhesive plaster will be found sufficient but in wounds of the abdomen Sutors must be used or else the patient will be liable to Hernia at that place. The coagula should first be washed away and then the adhesive plaster spread on new linnen of a proper width should be applied transversly across the incision drawing the edges together - They should be applied in such a

manner

manner as to favor the escape of the blood, matter & Pus, for if it be confined it may collect in the cellular Membrane and occasion abscesses. the strips shewn be at the distance of a quarter of an Inch apart; and the Seperation of the sheets is more especially requisite when an artery or Vein has been taken up so that the pus that is necessarily formed may have passage to escape

After the sides of the wound are drawn together & secured by adhesive plaster a portion of lint suited to the size of the wound & spread with any kind of cerate may be applied to it, on the top of wh a compress of linnen is to be applied and the whole secured by a bandage. these dressings should not be removed in less than 48 hours, in wh time I have seen an union of the divided parts. Inflm is only now to be feared, and if it should run high blood letting must be used according to the symptoms, low diet. Rest &c. Purges may be employed occasionally to prevent costiveness

If no inflm be present & the patient be weakened he may take some animal food as some inflm is necessary to cause an union

When the Incision is made by glass treat it as a contused wound, and it should be left

to

to suppurate, because some spicula of the lips may be left in the wound and act as extraneous substances - even transverse inscis=
=ions may after be kept together by adhesive plaster and reunited. These may be generally found sufficient when the limb is placed so as to cause no restraint in bringing the edges together. This should always be preferred to stich=
=ing it up with a needle & that for two reasons. 1st Avoiding pain and 2nd every stich of the needle adds a new punctured wound to the injury, also the thread always occasions a suppuration by the irritation it produces. - but there are some parts where suture must be used, as in the Eyelids Nose Ears Lips Scrotum Abdomen and in particular affections of the scalp &c where the parts are so flexible as not to admit of other treatment. we should be careful in in injuries of the scalp not to draw the divided edges too much for the purpose of bringing them together lest by over stretching the flap we stop the circulation and so produce mortification of the loosened parts. When sutures are used the interrupted & the twisted are the best, yet there are objections to them & they should always be dispensed with if possible

Punctured

Viale 7

# Punctured Wounds

A punctured wound is a seperation of the soft solids - communicating by a small opening externally. The irritation is greater than in incised wounds. In cases of punctured wounds we should be very cautious in using a probe for the purpose of investigating the extent of the wound, since by that means we irritate the wound, and destroy the adhesion that may have taken place, and thereby prevent or retard the cure - It is better to make an incision to examine for any extraneous substance near the surface, than to use the probe or forceps for that purpose - This should be done soon after the accident happens, or else it should be deferred until after suppuration takes place

When matter has collected in a punctured wound and the extraneous body by wh the injury was produced be not discharged, it then becomes very necessary to dilate it, and also when large vessels are wounded and cannot be taken up without - Again it becomes necessary to dilate them when the constitution suffers by them. In July 1805 a lad in getting over a fence fell upon a Nail which ran into the flesh below the knee,

about

about an inch, upward toward the joint; febrile symptoms came on & he complained of sickness in the stomach, & pain in his neck & head, his pulse was frequent & quick. The wound was opened and the pain was immediately translated to the part affected and excepting here he felt no pain in any part of his body. The wound was dressed with common Poultice & healed kindly —

I knew a Lady who was thrown into convulsions by puncturing her finger with a Needle — These con=
=vulsions continued for the space of an hour & a half. the puncture was then dilated, and the spasm went off without returning — When punctures or contusions happen during warm weather they should not be healed up too speedily, but suppuration should rather be promoted, cordial diet & wine should be given, by wh means tetanus is frequently prevented —

## Lacerated Wounds

these are made by dull blunt instruments, and much mechanical disorganization being done, or kill the flesh where it is seperated. Opium combined with small portions of Emetic should be given to alleviate pain and compose the patient, and bread & Milk poultice applied till the dead parts come away.

TJ

If inflamation with much fever supervene it must be remedied by Bloodletting Purges. low diet &c. If Symptoms of Mortification come on Opiates to ease the patient, & prescribe porter, wine bark &c.

In Lacerated wounds there is very small loss of Blood. I attended a boy who had his arm torn off in a Mill, the Hemorhage was so small when I got there after riding five Miles as scarcely to wet the compresses over the Stump. The Reason why hemorhage is less, the blood vessels are so much Killed as to destroy their powers of pushing the blood forward.

Penetrating Wounds. are such as extend into the abdomen Thorax &c. When wounds happen in the Thorax they are attended with great danger, by causing injury of the Cavity

If the Lung be wounded, or the puncture made through the pleura be not very small, the air gets into the Cavity, the Lung contracts & the patient performs respiration with great difficulty.

If the Lung be wounded the patient coughs up blood, and there is likewise an effusion into the Cavity causing great depression. Some times the Vessels are injured so that we have to take them up. If

(Wounds of the Thorax require much more V.S.)
then any other part, low diet, rest, & blisters to)
(the ant side should be used -

If one of the intercostal arteries arteries be divided so that the Tenaculum cannot take it up, pass a Ligature around the Rib by means of a needle & secure it in that manner. This I have never perf=
=ormed. Balls & Shot accasion the worst of wounds because they tear the Soft parts and accasion a loss of Substance. Wounds in the Thorax are very distressing when accasioned by Balls; they generally inflame the part where they enter making suppuration and Sloughing off necessary before the orifice can heal. The patient is affected with anxiety & difficulty of Breathing. Blood letting, rest, low diet, &c are necessary - The dressings are apt to draw into the Cavity of the Thorax in Breathing. This indeed happened once in a case under my care

Care should therefore be taken to dress such wounds with adhesive plaster or bread & Milk poultice confined in a gauze bag - The edges of the wound when not killed should be kept together for the purpose of uniting them if possible by the first intention, when the sides of the wound is aprox=
=imated & united, the Cavity is complete; and the cure is effected - No bad effects is to be dreaded from the air that is left in the Cavity. This never causes inflm as proven in cases of Emphy=
=sema. The inflm when it ~~a~~ supervenes arises Mr Hunter says from the Stimulus of imperfection.

Two

Two officers playing cards, together a quarrel arose between them, whereupon one stabed the other with a Dirk just above the right pap in the chest; The air had admission into the cavity when I saw him; his extremities were cold, his pulse small & irregular. his countenance pale, no symptoms of inflm. of the pleura appeared. I applied adhesive plaster over the wound & the 3d day it had united, and on the sixth day he was able to walk out in the street.

Having spoken of wounds in general, I shall proceed to particular one & first of

## Wounds of the Face.

as there are many cases in the treatment of wh suture is always necessary. So there are likewise cases in wh it should never be used. The ancient Surgeons used sutures in all most every case of wounds; but in wounds of the Face sutures should not be used as they always occasion deformity, by marks of the stiches after the wound is healed. I have seen a Lady one side of whose face was very handsome, and the other side very much deformed in consequence of this mode of treatment.

In wounds of the Eyelids unless the tarsus be divided, adhesive plaster will answer

the

* To this might be added a little Muscul
to advantage

the purpose. we should be extremely careful to avoid puncturing the Tunica adnata; the stitch should only go through the Skin of the Eyelid, because if the thread were to come in contact with the globe of the Eye, it would continually irritate it & bring an inflm of the whole Eye. I have seen a case where Shot have entered the Eye just at the Edge of the Sclerotica & penetrated to the Chrystaline Lens. I have seen an other case where the Eye of a young Lady was punctured by a piece of glass; and violent inflm was the consequence. From what ever cause the Eye may be wounded, we should endeavor to remove all irritating Sub=stances, and by well timed bleeding, purging low diet, Blisters Scarrifications &c, with the use of collyria we may prevent Suppuration

The best Collyrium is the pith of Sassafras (Laurus Sassafras) in water or Milk & water. the an other excellent wash for Eyes is

℞. Sacharm Saturna 5 ss
Vitriol Alba 3 ss
* Liqd Laudanum gtt 12 or 15
Aq Font — ℥ iv *

Topical Bleeding by cups & Leeches, also blisters behind the Ears. The loss of a few drops of

Blood

by Scarification of the Vessels of the Adnata, with the Shoulder of a lancet is generally of great use & prevents the necessity of large general bleedings in some cases. The Patient should be kept in a dark Room. If blindness accur it is some times in the Surgeons power to relieve it by an operation but of this however I shall say more hereafter (See Cox's Museum)

2. Wounds of the Lips. Generally in wounds of the the lips, unattended with a loss of Substance it will be sufficient to bring the divided edges together with adhesive plaster but if a portion of the Lip be lost it is necessary to use a Suture –

In Wounds of the Tongue wh we find some times to accur from people biting or receiving a blow on the Chin when the tongue is protruded, it is necessary to use the interrupted Suture, as it is difficult to get at a wound of the Tongue, the patient shuting his mouth with pain, it is necessary to place a soft stick of wood between the teeth to prevent getting bit. The Tongue if necessary may be drawn out by a hook! wounds of the Tongue generally heal in about Six Days. The patient should be fed with Liquid Substances entirely.

In

In Wounds of the Ears a Simple Suture is Sufficient —

Wounds of the Throat mostly accur to people intending to commit Suicide. When the Skin only is divided there is no difficulty in curing it, but Some times the Trachea is divided and the Large vessels are exposed, The first thing to be done is to attend to the Hemorhage, and Secure all the Bleeding Vessels, either arteries or Veins: even if the Carotids be divided they may be Secured by ligatures as the circulation may go on to the head by the Vertebral Artery. When the Hemorhage is stoped, the sides of the wound may be aproximated; this can mostly be done if Small by adhesive plasters alone, but if these are not Sufficient we may use Sutures, having caution to include the Skin & cellular Membrane only, for if a Stick was taken in the Pharynx it might create Vomiting by its irritation; and if a Stick was taken in the Side of the Trachea it would occasion a Continual coughing. When this is done the head Should be inclined forward, to favor the Union of the divided Edges, and be Secured in that position by a bandage. I believe in every case, it would be most prefer

not

not to draw the Edges too close together, so that the blood & Matter be collected it may be discharged, all the Vessels both arteries & veins should be secured altho apparently done bleeding, for if any blood be left oozing from the orifices it may escape into the Larynx & occasion suffocation

In wounds of the Throat a great deal of inconvenience results from swallowing, as every such attempt must separate the sides of the wound. To remedy this it has been advised to introduce a pipe through the Nostrils into the throat for the purpose of conveying food to the Stomach, but this causes too much irritation to be practicable, as it keeps the patient continually coughing or sneezing - He should be supported by nourishing injections thrown up frequently by the anus. If cough accur it must be relieved by Demulcents.

Wounds of the Abdomen are dangerous according to the injury done their contents. When they are superficial adhesive plaster will be sufficient to keep the sides of the wound together. But if they be through the Parietes there will be danger of Peritoneal inflm. to prevent this it will always be desirable to unite the wound by the first intention. If the Intestines protrude after cleansing them they

should

should be returned, and the wound closed by the interrupted Suture. In the Suture of the abdomen two Needles should should be used to each Ligature and the Stiches should be commenced internally at the distance of about 3/4 of an inch from the divided edges, and the Stiches should be about half an inch apart. The patient should be kept to a very low diet, and the bowels freely opened by mild purgatives — When union has taken place between the divided edges, the sutures may be removed and adhesive plaster applied

When the wound reaches into the Cavity of the abdomen the danger arises from injured viscera and before closing the wound by the stich you should proceed to examine the injured Viscera and they should be first secured before we proceed to close the wound in the parietes. The chief danger arising from wounds of any of the hollow Viscera, is the escape of their contents into the Cavity of the Peritoneum. If the stom=-ach is injured some of the last taken aliment will be evacuated from the wound, & if the Intestines are wounded blood will be discharged with the faeces per Anum. and in both these cases great Nausea and depression of Spirits supervenes.

When

X ends of the thread & Return the interture

When the Stomach is wounded, food will be discharged through the orrifice vomiting of blood will be induced together with cold Sweats, and a tendency to faint, and when it proves fatal the patient dies about the third day

When the Intestines or Stomach are wounded they must be closed by the twisted Suture, four stitches will probably be sufficient to close the intestine. The knot may be tied so as to be on the inside of the intestine, when this is done cut off the ends of the thread & return the intestine. The thread will get into the Cavity of the intestine & pass off by Stool. It was formerly the custom to bring the ends of the Ligature out of the wound in the abdomen in every case where the intestines were stitched untill Dr. Cooper proved that the remain=ing part of the thread if cut close & left in the belly will get into the cavity of the intestines & pass off by Stool

Case of a Gentleman in Maryland who in pursueing a Negro was wounded with a knife passed in near the cartilage of the false Ribs, through the Stomach and to the Cartilages on the other side his dinner wh. he had just eaten was evacuated through the wound immediately wh consisted of Cabbage Bacon Beer &c

he recovered.

Transverse incisions of the Intestines are easier healed than longitudinal ones, and it costs much more pains & difficulty to close a longitudinal than a transverse one, Since the diameter of the intestine is lessened by the former, causing a lodgment of the faeces at that place. If the Longitudinal wound be not too extensive, that portion of the intestine may be removed & the transverse ends brot together, the practice has been tried & Succeeded when three inches of the intestine had been cut out.

The patient should be fed Sparingly so as not to distend the bowels, his food should be almost altogether Liquids

Laudanum may be given to allay the pain and keep the intestines still, so that their peristaltic motion may not prevent an union. Glysters should not be administered lest probably a part may escape by the wound. Blisters & fomentations should be applied to the abdomen

Even the Stomach may be stitched when wounded. I have known an instance in wh it was done & the patient recovered..

Generally in

(x misplaced)

Generally in wounds of the abdomen a piece of the Omentum protrudes at the Orifice (and if the intestine is wounded faeces will frequently pass out ×) When the Omentum is wounded generally some hemorrhage takes place. The bleeding Vessels may be taken up with the Tenaculum and secured by Ligature and the omentum stitched, but the Ends of the thread must be left out of the wound in both cases.

Some times the Bowels are injured and do not protrude, it has been a question of dispute whether the wound in the Parietes should be dilated to search for the injured parts or not. I believe it is right to search for them by enlarging the wound in a degree, if it be not large enough already, but the wound should not be enlarged freely lest we induce great inflamation. but there has been cases in wh the intestines have been wounded × nothing been done, in such Cases where the intestine is wounded it commonly unites to the Peritoneum round the wound of the parietes by the adhesive inflamation. It would seem when the intestines are wounded, that their peristaltic motion would prevent their adhes= =ion. When the bowels are injured and the wound can not be discovered, and the

orifice

orifice be large enough for the intestines to pro=
=trude, it should be stitched up. If infl^n
supervene copious bleeding purging low diet
&c are necessary, and some times tho the cir=
culation seem weak yet the infl^n may prevail
to a considerable extent.

When the Liver is wounded a pain
is felt in the Region, & in the Shoulder, it is
of a dull heavy kind. If the wound is
small it will in general heal soon, but if
large great hemorhage ensues & Death is the
consequence. Some times infl^n is produced
in the Peritoneum by the accumulation &
Distention of blood in the abdomen.

In those cases little can be done, the
Patient should use evacuants & live on barley
water & the like.

When the gall Bladder is wounded, Death
is inevitable, owing to the escape of its contents
into the Cavity of the abdomen, causing by
its irritation Violent infl^n it always proves
fatal. I believe the same happens from wound
of the Pancreatic Duct

When the Kidneys are wounded the
Patient

the Patient passes bloody urine, and if it pass into the cavity of the abdomen it produces Death, tho the back part of the Kidney may be wounded, and the wound heal without any inconvenience.

Wounds of the Bladder mostly prove fatal, when they communicate with the Cavity of the peritoneum, but when wou=
=nded below that Cavity they are attended with no bad consequences

Wounds of the joints if we are not careful to guard against them, inflamation & Suppuration occur. The Sides should be aproximated as soon as possible with adhe=
=sive plaster - Mr Hey says that sutures are never necessary, but if the Limb be kept in the proper situation there is but little need of a Suture, But if the situation of the wound is such that Sutures can not be dispensed with, care should be taken that they do not pass into the Capsular Ligament, but through the integuments only, or else the irritation of the thread will cause inflamation of the whole Joint. When treated with adhe=
sive plaster they generally get well in a

few

few days. I saw a case where a Turner cut his knee with a chisel, the wound was oblique penetrating through the capsular ligament, it was closed with adhesive plaster, & I extended the limb by applying a long splint from the Ischium to the ancle, the patient by this treatment together with the ante phlogistic Regimen recovered in a few weeks with a perfect use of his joint.

Purges & if necessary a blister may be applied. wounds often heal easily under this treatment, tho their first appearance is very unfavorable. (the contrary practice is always prejudicial) I have seen wounds of the joints where the bone has been injured and the wound set well by this mode of practice. Mr. Home says we should always try to effect an union by the first intention, wounds of the joints should likewise always be treated with the limb extended. The bad effects of an opposite mode of treatment, where the sides are prevented from coming together, by lint may be seen in the following case. A Physician was called to a young man who had wounded the capsular ligament of the knee with a Shingles hatchet he applied lint dipped in spirits of turpentine

to

to the bottom of the wound, in consequence of wh the Knee swelled very much attended with fever, great pain, convulsion & twitching of the Knee attended so that he could not sleep unless two persons sat by & held the Limb, Abscess formed under the capsular lig=-ament both above & below the joint, every time the dressings were taken away a cons=-iderable quantity of Matter with the synovia of the joint was discharged & great infl^n of of the joint had taken place, this at first was a clean incised wound, after this an Oedema come on but was cured by Mercurial purges, He Recovered after 4 Months confinement, but with an anchylosis of the Knee joint. Besides the common dressing in wounds a Splint should always be applied for the purpose of keeping the limb extended, & to prevent motion of the joint wh would produce infl^n, this prevents the usual symptoms wh occur without this precaution such as delirium twitching &c together with the infl^n of the divided surfaces, caused by the edges rubbing against each other; If splints be applied so as to prevent all motion of the joint as a very slight motion of

it does

× In injuries of the elbow joint Drop the arm
bent to the body to prevent a Stiff Straight arm

does much injury. The situation of the Limb where we expect anchylosis or where we wish it to take peace will vary according to the Limb affected. if it be the Elbow the arm should be kept moderately flexed, for if union of the bones take peace when the arm is strait, the Patient will have no use of the Limb, so that it will be very in=
=convenient, but if the elbow be some what Bent the patient can perform many useful motions. But if the Knee the joint be aff=
ected & the Limb flexed when the union takes peace, the patient will not be able to walk so that the leg in affections of the knee joint should always be extended, as it will be most useful in that position, the limb being brought in that position the wound should be dressed with adhesive plaster, and secured by a Splint & Roller, the Patient should be bled & put upon the antiphlogistic regimen, a purge & if necessary a blister may be applied, wounds often heal under this treatment tho their first appearance is very unfavorable. The same caution is necessary in inflm of the joint, bleeding blistering, purging, the Splint, Rest. low diet

&c

The Cartilages covering the ends of bones forming Joints are Some times cut through, & yet unite by the first intention. From observation I have been led to conclude that infl^n of joints does not so Soon take place as infl^n from the Same cause would in other parts of the body; the irritation causing only an increase of the former action, & a much greater Secretion of Synovia.

In large Lascerated wounds of the joints, Such as Surgeons call compound Luxations where they must Suppurate it has been a dispute whether the Limb Should be amputated or not. If it is not done there is Some times danger of Mortification from the violence of the infl^n. I once Saw a case of a young man who had the bones of his arm mashed by a cart wheel, and the splinters of the Shoulder bones irritating the Cavity of the joint accasioned the Death of the patient who probably might have been Saved if the arm had been amputated. If the Patient escapes Mortification he is liable to Tetanus or profuse Suppuration; wh last will termenate in Hecti-Fever, and amputation will be indispensable. If amputation of the Limb is necessary we Should immediately inform the

Patient

Patient, of the consequences if he does not sub=
mit to the opperation, more especially if the
weather be warm.

If the amputation is not performed and suppuration
goes on, the limb at least must anchylose &
be rendered stiff ever after, or if anchylosis
be prevented, the cartileges will be removed, &
nothing but a ligature will keep the bones
together rendering it perfectly useless. If attempts
are to be made to save it the best application is a
bread & Milk poultice. There is most danger
of these Symptoms accuring in warm weather, &
in Persons accustomed to drink spiritous liquors;
There is more danger also if the patient be old than
if young. Partial stiffness of the joint is owing
to adhesions forming between the capsular ligament
and the joint, or ends of the bones. But there are
cases where the joint cannot return to its natural
state and must Anchylose. Before a joint
can become anchylosed, the Cartileges must
be removed as they never unite together. I will
shew you in what manner this takes place

Cartileges never inflame, become Carious
Suppurate or Slough off; they neither gron=
=ulate or exfoliate. but they are removed
by the absorbents. A young Man received

a

a Charge of Shot into the ancle joint, fever & Suppuration Succeeded with Night Sweats, the Limb was taken off, granulations appeared from the bones but not from the Cartileges wh last was nearly absorbed. after the Cartileges are absorbed granulations are thrown out from the ends of the bones, and uniting together render the Joint anchylose, forming but one bone - To favor this process we should keep the joint perfectly still; for if the uniting parts be torn asunder, they will not readily re unite. Authors tho without being able to assign a reason for it, have advised to saw off the ends of the bones, this rem=
=oves the cartileges out of the way without wait=
=ing for them to be removed by absorption, but this is a bad practice because it occasions great pain & is done with difficulty and danger of wounding the surrounding soft parts

I believe Scraping of the Cartilege from the end of the bones with a knife, when the con=
=stitution can not bear the irritation long enough for absorption to remove it, will answer very well & often better - - - - bones be carious it should not be done. A Splint should always be used to keep the Limb perfectly at rest.

Wounds

( a sharp pain, a loss of power in all the parts supplied by it

Wounds of the Nerves & Tendons produce when a nerve is partially divided it is said to produce great pain, Twichings convulsions &c & this was said to be the case when these Symptoms followed Phlebotomy, but it can not depend on this, for no Surgical operation can be performed in any part of the body without wounding a number of the small branches of Nerves, & yet these Symptoms seldom occur.

I have seen Tetanus from a wound of the Skin Inflamation & Swelling of the arm sometimes occurs after Phlebotomy. I shall account for it in a different manner, I mention this to guard you against a very terrible operation proposed by Mr. Bell, wh is to make a com=-plete division of the soft parts at that place down to the bone. When weatness is felt in the arm immediately after blood letting, and the operation be followed by pain, and if it increase & become worse for two or three days instead of better, then we may suppose a nerve or tendon is injured, and an incision may be carried a little deeper and the nerve be com=pletely divided, But I am happy to say that such cases do seldom occur.

perhaps

Page 94

Perhaps the best Symptoms of a wounded nerve are a numbness & partial paralysis of the arm below to wh the Nerve goes

Wounds of the Tendons are no worse than wounds of other parts, unlesse punctures of the fascia. These are some times attended with inflm of the parts beneath them, wh are bound down & compressed, and Suppuration ensues. When inflm is an attendant upon wounds of the fascia of the Thigh, of the Head &c a blister should be applied over the injured part, and if this be not sufficient to relieve the inflm, and matter be collected underneath, a full incis=
=ion should be made to give vent to the Matter

Some times the Tendons are cut quite through, they require no different mode of Treatment from other wounds, The limb should be secured in the best position; the edges of the wound brought together by adhesive plaster. When the Tendo Acchilles is wounded wh often happens, the Toes & foot should be extended. This may be done in two ways, 1st by fastening a roller to the foot and carrying it over the heel, over the back part of the Leg & fastening it to the Thigh. or 2nd by a

piece

piece of paste board placed on the fore part of the leg & secured by a roller, care should be taken however in all cases of wound just above the heel not to make too great extension but just sufficient to bring the divided edges into contact, for by extending the Tons too much we throw the Skin into wrinkles, and bring it into contact with the divided Surfaces and prevent their union, this Some times will happen from contraction of a part, even with or moderate extension of the foot, turning in the edges of the wound So that it can not heal This we Some times find after dressing it for one or two weeks without any Symptom of healing; the Skin should be turned out & kept out by the interrupted Suture, when the Tendo Achilles is divided the foot should not be used for 6 weeks, for by So doing he may lengthen the Tendon wh is yet quite soft at the peace wh was divided, or in fact prevent an union from taking place

## Wounds of the Veins

These Seldom occasion much Trouble but Some times inflm & abscess. In wounds of the Veins the inflm begins at the orifice

and

and extends along the inner coat of the Vein, Dr Hunters opinion was that infln of the veins was continued on to the heart and that pus was also carried into the heart & Death thereby induced

The infln & Swelling consequent upon Phle=
=botomy is best treated of by Mr. Hunter in a paper upon infln of the Veins published in the first Vollume of the Medical & physical Transactions wh I shall read to you. (Wh he read) When the Symptoms before mentioned occured it was supposed that a Nerve or Tendon was wounded & that the person was a bad operator - but when a Nerve is punctured in Vene Section, the patient complains immedi=
=ately of numbness & loss of action in the parts below, but if the pain does not immediately follow, the bad effects must arise from infln of the Vein. I have never known the arm swell & inflame after an injury of a Nerve, but the pain & Numbness subsided in a few days.

It has been proposed by Mr Bell under such circumstances to divide the soft parts just above the wound by a transverse inscis=
=ion to a considerable depth, so that the Nerve might be divided, but this should never be done, tho it alleviates the pain and patients

hour

have got well after such treatment, if should not be done because it subjects the patient to much greater danger, and the alleviation of pain is owing, only to the taking off the inflammatory tension of the part by dividing it

If inflm runs high a blister should be applied over the orifice having previously placed a small piece of adhesive plaster over it. The same practice should be pursued in wounds of the Nerves & Tendons. There was a case in the Pennsylvania Hospital, of a young girl, on whom I applied the blister with success. Stiffness of the arm is a very common effect . . . . . .

## Sutures

I promised in our last lecture to give you a discription of sutures in our next, I shall therefore proceed with that subject. The kinds of sutures wh I prefer are the interrupted & twisted and first of the Interrupted They are nothing more than a simple stich made by means of a Needle passed from one side of the incision to the other through the edges of the wound, this done draw the edges into contact and tie a knot, this however should not be directly over the wound but a little to one

side

(x That may not be correctly transcribed)

side & the Suture is completed.

Twisted Sutures, are effected by means of a Silver Wire encased in a Steel point, wh can be taken off and put on at pleasure this is to be passed through the edges of the wound from one side to the other, wh being done draw off the Steel case, that it may not hurt the patient by its Sharp point and the wire remains behind, through the edges of the wound, then take a ligature & wind it round the wire in the Shape of the figure 8 always decupating in the Center, & drawing the edges of the wound in close contact, when the wound has united sufficiently to take off the thread, draw the wire out gently & the thread will come away.

## Gunshot Wounds

When fire arms were first used, the wounds produced by them were considered as being a distinct Species of wounds, The livid colour wh ensued accompanied with a black Slough Vesication & gangrene, caused them to suppose the effects must have resulted from Poison, or from the part being burned (because probably from the composition of gun powder being so little known)

This

this gave rise to very anxious enquiries, and the antidotes chiefly used were of an acrid stim-ulating nature such as they thought would counter act the poison, and by such treatment gangrene & extensive sloughing supervened; But these wounds are now considered as so many varieties of contused wounds. If the body occasioning the wound be of a roundish figure the wound is undoubtedly a contused one.

When the Ball goes with great velocity it occasions the Death of the divided parts, and the greater the Velocity of the Ball, the greater is the injury done to the part. for sometimes the ball passes through a part and that surface wh gives exit to the Ball, heals first & with lip slough, sometimes uniting by the first intention without the formation of any slough. The Dead parts formed into a slough or crust, should be extracted with great care to prevent Hemorhages. we should therefore watch when it is about to slough off, wh is generally about the 10th day; as on the seperation of the dead portion of the wound the passage created by the ball becomes enlarged & if a vessel is divided when a slough takes place an hemorhage ensues, and we aught to have every thing ready to stop such Hemorhage

Some persons might think necessary to ex-

tract

extract the Slough when it becomes some what loose, but all violence should however be avoided, if the vessels divided be large, for fear of Hemorhage which often accurs when the parts Slough, (in cases of gunshot wounds) even when no hemorhage had taken place at the time of the accident owing to the vessels being Killed by the violence of the Contusion, wh portion of them comes away when the parts Slough with other Dead Matter.

It has been advised to bleed freely in all cases of gunshot wounds; but I could not in all cases recommend bleeding at first, as some mpl^n is Salutary. Gun Shot wounds require the same method of Treatment of other Lacerated Wounds. A Dilation of the wound to extract the Ball is not necessary except on particular parts. When the Ball is Lodged in the Trachea, the patient perform Respiration with difficulty, in such cases the Ball should be immedially extracted, to preserve the Life of the Patient. Gunshot wounds of the Scalp should be treated in the same manner generally as other wounds of that part. It is necessary in some cases to lay the Scalp open by incision, for the purpose of examining the Cranium.

When the Cranium is laid bear with a

Ball,

Ball, the exposed part, if violently contused, should be removed, as the contusion might occasion an abscess in the Cranium. When the Skull is injured the same steps should be taken as if the fracture happened from any other cause, as these accurences do not differ from other wounds. I believe they have nothing peculiar to them. A Gun Smith

Mr Bity had determined to put an end to his existence, while his fellow workmen were gone to Dinner, for this purpose he loaded a pistol, and applied it to the back part of his ear, supposing the contents would have gone through his head, but in this however he was disappointed for the Load did not enter the Skull, but took of his whole ear & surrounding parts so as to expose the bone, he was however able to walk to the hospital & relate the whole circumstances

He complained of great pain in the head, trepanning was not performed, he was seized with a Delirium infln of the Dura mater come on, and he died

Some Surgeons advise the Trephine in all cases of Gunshot wounds affecting the Cranium; but I would only recommend it in those cases where Symptoms of infln of the Dura mater supervene

The patient feels the most easy when the Ball is extracted. When the more fleshy parts are wounded, and the orrifice sufficiently large

for

for the introduction of the finger. it should be preferred to a probe; for the discovery of the situation of the Ball; because first the probe would not convey that accurate sensation, wh we derive from the finger, as to the situation of the ball & state of the parts. Second the probe would be much more liable to irritate and injure the parts than the finger

If the ball be superficial the wound may be dilated, and it taken out, but if it be deep or difficultly situated it is improper to search for or attempt to extract it; for it is admitted that a wound will heal up as quick with or ball in it, as quick as without it, and as balls seldom rap in straight lines it is frequently rendered impracticable to discover their situation with a probe, or extract them. I knew a case where a ball entered the ankle & made its escape up the leg and was found above the knee, the skin having prevented its from rapping out. If much Hemorhage ensues it is necessary to dilate the wound to take up the injured vessel; and if fractured parts or fragments can be readily extracted it should be done immediately. The best applications is linseed or bread & Milk poultices. No stimulating applications should be made use of, unless in particular cases where no inflm occurs. The Treatment should

very

vary according to circumstances. Most of the wounded are faint very much depressed & weak; this should be relieved by anodynes, if the extremeities are cold Bark wine &c may be used, and Synapisms applied. We commonly bleed in cases of Gunshot wounds but not always, for where copious evacuations have been made use of Tetanus often succeeds & destroys Life. We should not bleed indiscriminately in all cases, but wait till fever & inflm come on, & if they are proportionate to the wound they are Salutary, for both fever & inflm in gunshot wounds is necessary to the restoration of the part. I knew a case where the Patient was bled purged & the inflamation was done away altogether. The consequence was That Tetanus immediately insued. The Physician insisted on amputating the arm, but I differed with him in opinion, for I have seen a case where amputation terminated fatally almost before we got the dressings on. When Suppuration has taken place we may use the Bark in powder or decaction with invigorating Diet, (if neither fever or inflm come on we may continue them). if the effects of such a mode of practice should not induce too much inflm we may continue them, but if too much fever should occur we may have recourse to the

antiphlogistic

antiphlogistic regimen.

In Gunshot wounds we must treat them accordingly to the nature of the case or the injury done, if the bone be fractured we must treat them like common fractures, or such fractures occuring from other causes.

It is necessary in all cases of wounds of the Thorax to bleed as they are always accompanied with more or less inflm, and wounds of the Thorax require much more bleeding than any other parts. In one case I have taken 186 ounces in fourteen days & the patient recovered. Rest. Blisters to the out side should be used with low diet

If the Spine be wounded it occasions a paralysis of all the parts wh receive their Nerves below the injury. If it be the Cervical part above the Phrenic Nerve it occasions a paralysis of the Diaphragm and the patient immediately dies, if it occurs below that Nerve the Patient may have life for several days: but most commonly Dies in about four or five days.

Wounds of the Abdomen are injurious according to the Viscera injured. In wounds of the Liver I would recommend copious bleeding.

If the Gall Bladder be wounded; the Patient is affected with great depression & the bile makes its escape into the Cavity of the abdomen, violent inflm ensues & the patient dies.

Wounds.

wounds of the Stomack are mostly fatal, the Patient is affected with depression; a disagreeable sensation, nausia, & Vomiting of blood. A patient who had been drinking a hearty draught of Porter received a wound in the stomach, wh was situated equally distant from the sternum & the Ribs. the porter in part came out of the orifice and part was effused into the Cavity of the abdomen wh was puffed up in the hypogastric Region, the patient complained of great pain & finally died.

The edges of the wound in the stomach had united by the first intention, and no sign, ~~and no~~ of infln of the stomach appeared. I believe he would have survived the injury done to the stomach and other parts if infln of the Peritoneum had not taken place, in consequence of the contents of the stomach being partly effused into its cavity

Wounds of the Bladder prove frequently fatal; I believe not owing to any delicacy of that viscus; but to the urine passing into the Cavity of the peritoneum, and occasioning infln there for we often see the Neck of the bladder divided without any bad consequences. In all cases Rest is a necessary part of the Cure, the patient should keep very still; his food should be mild and opening. Blisters should be applied to the

abdomen

abdomen, and fomenting poultices to the belly, and the wound should be closed by an interrupted suture when situated in the abdomen —

When a Bullet passes through a joint much injury is apt to be done the ends of the bones compressing the joint, when this is the case there is a great deal of danger, of extensive suppuration

If Hectic fever supervenes amputation becomes necessary, but frequently the wound partakes of the nature of a Lacerated wound, & sometimes unites by the first intention. In cases where the probability is very small of saving the Limb, I would recommend amputation to be done immediately, by this means we avoid extensive suppurat^n, & Hectic fever, & the operation will be more Readily submitted to at this time by the Patient than ever afterwards —

## Lecture 7th

Ulcers, I have said sufficient in my former lectures to give an Idea of the definition of Ulcers, They are a very frequent occurance in the practice of Medicine, I would advise

those

those who attend at the Hospitals to pay the greatest attention to the appearances, and best method of cure of Ulcers, Since a knowledge of their appearances & treatment constitutes a principal part of the practice

There are two methods of cure, 1st by Nature & 2nd by the assistance of art,

as to the causes of ulcers they are of very little or no consequence to the surgeon, the manner of treatment being the only thing necessary to attend to

To the healing of Ulcers there are three impediments. 1. Whatever injures the Constitution 2. Edema. & 3. Improper dressings. I shall begin with an ulcer in the healthy constitution, and shall confine my observations chiefly to ulcers of the Legs. In the healing of an Ulcer the first process is the detumescence of the edges, next granulations appear raising the Surface to a level with the contiguous parts. The Gran=ulations appear first in little red points, and shots and are covered with coagulable Lymph, the pus is secreted about the consistence of cream. All healthy Sores are of a pale red, or bluish White colour. By the subsiding of the Infln the Sides of the Sore are brought nearer together,

Granulations have a disposition to unite with each other and when brought in contact adhere in about 24 hours an union takes place. Granulations have a power of contracting and thereby rendering the size of the ulcer less. We see this power of contraction very fully exemplified after the extirpation of Cancerous Breasts; the Skin wh is thrown into folds resembles nothing more than the consequence of contraction. I have seen it thrown into folds resembling the Mouth of a purse by a drawing string. The advantages resulting from this contraction are great, 1st because it expedites the healing process; & 2nd Because there is a less cavity to be filled up with flesh in consequence of it. The next process is Cicatrization. after these granulations are brought to a level with the old Skin a new one is formed, The granulations adhere to the edges of the Sore, from wh is commenced the New Skin of a whitish colour, on wh the ~~new Skin~~ Cuticle is formed at the same time and the new Skin is continued over the Sore, This new production is large & in old ulcers is not confined to one place alone, but is begun in many parts constituting small places or Spots, on the surface of a sore like little Islands.

Treatment

Treatment. In the treatment we may apply dry lint to the Sore wh will absorb the pus, & keep it from becoming dry & irritating. Soft dressings wh may be spread with a little cerate, or not, should be applied over it, & continued with a roller, wh should be slightly or loosely wrapped, or else the lint will be pressed into the granulations; under this treatment they will soon heal up forming a cicatrix.

Mr Bryanton has advised to approximate the edges with adhesive plaster, wh will very much expedite the cure. If the Ulcer happens in any capillary part, it is necessary to shave the part before we apply the adhesive plaster. Care should be taken to apply them so as not to cover the whole surface of the Sore as we should by that means prevent the evacuation of pus, and the parts contiguous should be pressed every day to evacuate the collected matter, If the dressings stick they may be wet with a little cold water previous to the time of Dressing, by wh also the heat and irritation of the Sore is alleviated.

The process of granulation is assisted by drawing the old skin over the Sore, This not only lessens the extent of the Sore, but supercedes the necessity for the formation of much new substance, wh is always more tender than

than that originally formed. It sometimes happens that the sides of ulcers will not unite when aproximated. They should then be washed with spirits or they may be touched with a little blue vitriol or any other escharotic - powdered Rhubarb, has been found useful

If these remedies fail, the surface of the sore if small, should be exposed to the air, to dry & form a scab under wh a new skin will form and when the scab comes away the sore will be healed. It sometimes happens that the flow of the pus is so great as to prevent the adhesion of the sides, so that they cannot close wh. an astringent wash will entirely correct this: for this purpose I used a wash of Bitt. Alb. & Sacht. Sat. to a patient of mine wh immedially stoped it, adhesive inflm. came on & the patient got well in a few days. In healthy constitutions ulceration seldom demands the aid of a surgeon, the blood-vessels are firm & vigorous, and capable of carry=ing on a healthy action in the extreme vessels. Greater action must necessarily take place in vessels of the lower parts of the body than in those of the upper parts, to support the impending column of blood, and to counter act the effect of gravity, hence the vessels of the newly formed granulations

being

being, weaker than those originally formed are unable to support the column of blood when we walk or stand erect, and this is the reason why in ulcers of the leg, the blood sometimes ruports the vessels of the leg. In others tho the Vessels do not give way, yet the parts are too weak to carry on the Circulation, and the sore becomes of a livid colour, owing to the stagnation of the blood.

By a rupture of the Vessels the inflm is increased and the sore discharges a bloody serum. when this not relieved the granulations are absorbed and a sloughing takes place. In this state of weak=ness the best thing to be done is to keep the patient in a horizontal posture, and more especially this leg wh should be rather elevated so as to take off the gravity of blood upon the parts, and the parts may be stimulated with spirits camphorated, or even alkahol. When the Vessels become varicose use a roller. When a rupture of the vessels take place & bloody serum or mucus is thrown, wh acts as an irritant to the new and tender granulations; inflm comes on & the secretion of good pus is diminished. If this discharge is not soon checked, the granulations slough off, the old symptoms return & the sore is enlarged. The best cure is a horizontal position. The patient should

should be confined on his back in bed and be kept perfectly at rest, when this can not be accomplished a bandage should be applied wh prevents an over distension of the vessels.

Bandages are of three kinds 1st The Laced Stacking. 2nd The Cotton Roller. 3d Strips of adhesive plaster this may be spread on Leather Muslin or linnen, but fine Cotton or linnen is preferable to leather, wh is apt to give way by the application of the moisture of the sore. A Laced Stacking would answer every purpose but it is difficult to obtain. The use of the bandage is when we wish to prevent the vessels from being over stretched by the return of blood

The Second impediment to the cure of ulcers is Oedema This is preceded by adhesive inflm wh forms the basis for the granulations, by uniting the cells of the cellular membrane: The watery part of the blood is thrown out into the cells of the cellular membrane, distending the sides of the sore, & uniting the Vessels on the stretch, but the cellular membrane being united around the edges of the sore by adhesive inflm can not give way to the distending force wh presses against the granulations; and if the distention be long kept up they will be apt to slough off. Oedema generally subsides at

Night

Night, & the injury done during the day is then repaired. In this way it will often continue for some time, while the Oedema continues destroying by day, what is renewed by Night. In the Cure Rest & horizontal posture are necessary. If this is not sufficient a roller must be applied, some authors advise to take a degree of exercise after the application of the bandage; It is certain the parts will heal speedily sometimes under this treatment, but I believe much sooner if the patient is kept at perfect Rest. The situation is a matter of great consequence, the Bandage should be applied in the morning before the patient rises and consequently before the leg swells.

The 3d impediment is that method of treatment wh some Surgeons call "dressing to the bottom" it is by keeping lint or other substances at the bottom of the wound; this is a very hurtful practice as it must irritate, the sore, increase the suppuration & sloughing & keep the parts asunder, and consequently prevent their healing. All such Dressings act precisely in the same manner as a Pea in an Issue

I might next enumerate different powders & salves &c but it is unnecessary. All stimulating salves are improper: they either bring on inflm, or by their acrid qualities act as Corrosives

By

By removing these unnecessary Dressings we put the Sore in a State of healing. This way of "Dressing to the bottom" was the ancient mode of treating Fistula in Ano. I knew a case of a man who had been under the care of a physician Several Months with this disease, and that without the least benefit: The physician at last deserted him, & the patient by siting in the Mud in a run from a Spring for a Short time perfectly recovered

What ever impairs the constitution, independent of Specific diseases, impedes the healing process. The use of Spiritous liquors act in this way, as we see ulcers in people frequently intoxicated very difficult to heal. likewise hot or cold weather retards the cure of ulcers. Fevers are hurtful, tho Febrile action Some times cures Ulcers. I have seen ulceration as large as the palm of the hand, after resisting other treatment 6 Months, cured by a fever in 3 days. The strength of the constitution has been supposed to have an effect in the cure of ulcers, observations prove the Truth of this in general, as the parts are able to go through opperation better, tho I think I have seen them heal equally well in both constitutions.

I Shall Speak now of the different kinds of old ulcers, and under the following

Heads

heads — 1st Inflamed Ulcers. These are known by their being painful, Soreness, red colour, and swelled edges. and are accompanied with an increase of heat. The pus changes, or in stead of pus they discharge some thin Serum, and other matter wh has a purulent appearance, and coagulates over the surface of the Sore adhering slightly to the granulations

Treatment. If there be much inflm present blood letting Purging Rest & low diet are necessary

Bred & Milk Poultices are the best applications to the parts and the patient should be kept in bed,

When the Patient is too weak to admit of evacuations and the ulcer is situated on the Leg, the foot may be raised to favor the return of blood, this acts as a local depletion, and without depriving the patient of blood, I have seen this accellerate the cure immediately. When the inflm has subsided it may be treated as a Common ulcer

2. Fungus Ulcers. These have large granulations wh are round on the top, and are above the surface of the other parts, and have no disposition to form a cuticle; They some times have great sensibility and bleed from the slightest touch, and in others they have little or no sensibility. They are

some

Some times attended with pain

Treatment. These may be treated with a Simple com-
-press, & Secured by a roller, wh presses the granul=
-ations together & prevents the growth of fungus. If
this is not found Sufficient the excrescence
may be destroyed by Lunar Caustic, wh may
be applied to a part or the whole. A Solution of
Verdigrese in water. Crude Sal ammoniac, calcined
Allum, Red precipitate, & pulv oak galls Some
times answer a good purpose

3. Oedematous Ulcers of the Legs

In these there is an extravasation of Serum
into the cells of the cellular Membrane. The
Granulations become of a purple colour.

If the patients strength is much reduced evacuations
will be improper. The leg should be raised to a
horizontal posture, and Dressed with adhesive
plaster & a bandage rolled from the Toes to the knee

4. Sloughing ulcers.

These arise frequently from a weakness in the
Granulations. In Some old ulcers when the
Granulations have arisen to a level with the Sound
Skin, they become of a black colour Mortification
comes on & the parts Slough. Some times Mortifi=
cation does not stop at the edge of the Sore

but

but goes on sloughing. It is curious to observe sloughing going on in one part & new skin forming in an other. but in general the Mortifi-cation takes place over the whole surface of the sore, this is always attended with pain. The Remedies for Mortification are here proper, I have often prevented the mortification by the application of a blister. Opium should be given to relieve the pain. this is generally attended with febrile symptoms, but if the granulations die through weakness, they should be dressed with a poultice combined with Laudanum, a Nourishing Diet Bark, Wine, Elixr Vitriol &c. Ulceration some times come on both legs at once one, breaks out while the other heals; this proves that it does not depend upon a weakness of the constitution, or both sores would be affected alike. In those cases from weakness we should use bark Opium Nourishing Diet &c. & when the Mortification has stoped Cornata grated & boiled in Milk may be applied to correct the Factor

The Fermented poultice mixed with powdered Charcoal may be applied. Some times when the Mortification is going on extensively maggots may be formed, (especially in warm weather) in the dead parts. Then the Nitric or Muriatic acid

may

may be used. diluted with equal quantity of water.

may be used diluted with equal quantity of Water. after the Slough has separated employ the common treatment.

I shall now speak of ulcers wh occur not unfrequently in weak constitutions. They generally look well at first; the granulations form rapidly, and generally rise to a level with the true Skin, (with a healthy appearance) but our hopes are soon frustrated, for the granulations in a short time change their appearance and become of a purple colour, and a part of them are removed by ulceration,

The patient should then have a nourishing diet, Peruvian Bark, Elixr Vitriol, Cold water may be poured over the sore four or 5 Minutes 3 or 4 times a day, a weak solution of Lunar Caustic upon Lint and applied has proved useful, Citron Ointment has also been of service, Lint diped in an infusion of Oak galls, with Laudanum applied to the sore, have some times cured ulcers wh have resisted all other remedies.

We come next to speak of Indolent Ulcers

## Indolent Ulcers

Where

Where Nature has been frequently protracted in her attempts to perform a cure, the parts become indolent; have no disposition to form a cicatrix, and when the inflm^n is reduced the edges remain in a callous Tumefied ring in consequence of Coagulable lymph not being absorbed when the inflm^n is removed. (See old notes)

Treatment The first thing to be done is to remove the Callous edges, after the inflm^n has Subsided, and so change the disposition of the Sore to a Simple Ulcer. This may be done either by the Knife or by Caustic, or it may be done by the means of Bandages & Prepare Mr. Baynton Says that in most cases the adhesive Plaster will mostly answer.

When the Caustic is applied we Should persevere in the use of it to the middle of the Sore, and Some times over the whole Surface untill the ulcer puts on a healthy aspect, taking care after it begins to heal not to apply it too near the edges, or we Shall by that means destroy the granulations of the newly forming Cicatrix and prevent the cure, making the ulcer larger.

Under this head I Shall Speak of the use of Mercury, This may be used in

Small

small doses, for a considerable length of time & if necessary the doses may be increased so as to produce a gentle Ptyalism

The Tinctr of Myrrh, is some times used or we may apply a Solution of Lunar Caustic to the part; or the Sore may be Sprinkled with red precipitate; dressed with the Citron Oint=
=ment. Gastric Juice, Muriatic or Nitr=
=ic acid, oak galls &c -

## Carious Ulcer

Caries in the bone is the same as Gangrene in the flesh. here the dead parts of the bone becomes a stimulus to the Absorbents to seperate the dead portion. Bell says that every Sore Seated upon or communicating with a carious bone is a Carious Ulcer.

I dont pretend to enter into a discussion of the causes wh produce an exfoliation of the bones; - - - - - - - - - - - - - - - -

As soon as any portion of the bone becomes loose, it ought to be immedialely removed if possible, but when the bone is Seated in a fleshy part it is very difficult to ascertain whether it is loose or not especially if the piece be large: but this may however be ascertained by

by introducing the probe, and if necessary enlarging the orrifice. and press upon the bone when if it be adhering to the Sound bone no pain will be felt, but if it be detached, the pressure, or even Slight touching, will produce great pain in consequence of the dead part being pushed upon the new & tender granulations. If blood follows, we may believe the dead portion to be loose. If the bone be loose in order to extract it, it will be frequently necessary to make an inscision down to it, for the extrac=
=tion of the loose portion, A Sponge tent how=
-ever often answers to dilate the orrifice very effectually. This Should never be delayed when practicable to remove it, for Granulations take place, forming a Substance nearly of the con=
=sistence of bone, around the dead part ~~part~~ wh prevents its removal. Some times the ex=
foliated piece is to large to admit of an inscision being made Sufficiently large for its removal; because if we divide the Vessels in So hard and callus a part it will be very difficult to take them up. To avoid this danger, it is better to break the bone by a pair of Strong Nippers, after wh the pieces can be readily extracted.

I knew

I knew a case of carious ulcer of the lower jaw wh irritated the masseter Muscles to contract so that the mouth was kept closed, cartilages was formed in the same manner, so that the jaw could not be opened, occasioned by the callous of the carious bone. The Surgeon not understanding the cause, sent the Patient to this City to have it dissected, supposing an adhesion of the parts had taken place.

Varicous Ulcer. These are caused by Varicous Veins, & very much resemble Ulcers of the indolent kind. The Vena Saphena most generally becomes Varicous, and prevents ulcers of the legs from healing. This may be often remedied by a tight bandage or Laced Stocking, but this is necessary to be continued so long that the patient is tempted to leave them off before the cure is completed. This may be remedied by an apperation, performed by tying a ligature around the vein, so as to take of the pressure of the collumn of blood

This practice was revived of late years by Mr. Hunter, and after ward by Mr. Home, I shall read you the treatment proposed by Home, In performing the apperation he recommends the patient to stand on a Table on wh is placed a chair

and

and lean over the back of it with the inner part of his Legs to the light. In this way the Veins will be completely distended with blood, and the horn will be ~~coapted~~ convenient height for the Surgion. But this can not always be done & while the patient is standing, for in this situation it is difficult to set the light to fall on the part; and the patient not knowing the degree of pain attendant on it is mostly restlep and discontented, and his tremors are so great as to endanger the Surgeon. I therefore apply a Torniquet on the Thigh so as to compress the Veins without affecting the Arteries, by wh means the become distended with blood & the opperation can be easily performed.

The Vein may be tied up in the horn; In order to do this the Patient should be laid upon a Table while in this situation; the Surgeon must pinch up the Skin on one side of the Vein, and an assistant on the other, wh raises the Skin transversly acraf the Vein, It is then to be divided over the vein with a Scalpel, wh will sufficiently expose the Vein, Some times a thin Fascia appears in this case the vein should be disingaged from it. after this a crooked Silver needle with a blunt point is to be armed with a ligature &

passed around the Vein, and the patient placed in a horizontal position before the Vein is tied to free it from all the blood; I apply a small piece of ~~Rag~~ new rag over the Vein directly under the knot, formed by the Ligature, so that when the sides of the vein have united the ligature may be cut away without injuring the Vein. This compress should be about the size of a quill

In common the ligature may be cut away about the fifth day. The ligature will generally come away from the 9th to the 12 day, but it is not necessary it should remain so long. after the Ligature is secured the edges of the wound may be brought together by adhesive plaster and a pledget of lint applied so as to keep ~~the~~ on the .... above & below the Ligature.

If the Vena Saphena be divided both branches of it must be secured. Some times both trunks of the Saphena are affected and require to be tied, but it will not be necessary to tie both when one only is affected

The 8th Species of Ulcers, are caused by local or constitutional Circumstances, and con=
=tinued by a peculiar diseased action, as in Ven=
=erial ulcers, Cancerous, Scrophulus &c

These may be remedied in 2 ways. The first wh are entirely local, may be cured by cutting the diseased part out with a knife, but if one Shec is left after the opperation as in Venerial Chancres, Cancerous &c, the parts Spread like a ring worm, and require the frequent use of Caustic

2. When the continuation of the Ulcer depends on any constitutional injury, that injury must be removed before the Ulcer can be cured.

## Lecture 8th

### On Fractures.

Fractures may be termed a complete Solution of Continuity of a bone, accasiond mostly by external Violence. but this is not always the case, because the Patella is Some times fractured in consequence of Muscular contraction alone, and the humerus is Some

times

times fractured in the Same way. Bones are most apt to be fractured in frosty weather, not that the frost enters the Substance of the bone but it is operated by a rigid State of the Muscles, for Slight falls in cold weather produce fractures, but an other circumstance, viz. the Contraction of the Muscles, easily contributes to this end. for instance when we slip over Ice the Muscles contract with Vehemance, and a Sudden Slip or fall occasions them to act with greater force, frequently producing fracture. This is proven by Intoxicated persons who Seldom break any of their Bones, in Sliping or falling, wh is owing to a great relaxation of their Muscles

When a bone is broken Oblique, there is great pain and this is increased upon the least motion of the parts in wh the injury is done, occasioned by the Short edges of the fractured Extremeties piercing the Soft parts & causing convulsive action of the Muscles: and when cured the Limb is frequently Shorter than the other, owing to one point of the bone lapping over the other, by the contraction of the Muscles drawing the Lower extremety up.

The Limb at the fracture readily admits of flexion and a grating noise is perceived upon such

motion

motion, attended as before observed with much pain, and the limb is often distorted.

Fractures are either Simple or compound. a Simple Fracture is when the bone only is broken without any external communication

A compound Fracture is when there is a division of the ~~sound parts~~ surrounding soft parts so as to admit of an external communication with the cavity of the fracture, but if the external communication be small it frequently heals by the first intention, and reduces the fracture to a simple one, and has been termed a compound simple Fracture

Treatment. In the treatment of a simple fracture of the extremeties, the limb should be placed in a state of relaxation, and the ends of the bones brot into their exact natural position. In general the convulsive action above mentioned ceases, when the limb is reduced.

In reducing the bone the limb should be placed in such a position as to favor the relaxation of as many muscles as possible, and by this means the reduction is in general easily effected; but when it can not be accomplished by the ordinary means, the Patient may be bled, ad

deliquium

× and while in that situation reduce the fracture,

deliquium animi, + This is seldom necessary, but I have been obliged in many cases to bleed my patients to great extent.

If inflm supervene it should be, reduced by bleeding and the antiphlogistic regimen. To reduce the inflm bleeding is preferenable to purging because the last will disturb the patient when he aught to be at rest, it is generally sufficient to keep the bowels open. The limb should be kept in its position by means of splints & bandages; (and a proper degree of inflm kept up.) Splints are stiff firm substances, and are of four diff. kinds, wood, leather, whalebone & paste board, of these the last is preferable, because they can be moulded to any figure, by wetting it in hot water & adapting it to the part, and when it becomes dry it maintains its figure.

We are very often not called to the accident till several days after it happened, and a considerable degree of swelling & inflm have taken place, this should be removed before we attempt the reduction of the limb, by bleeding, low diet, and the application of Lead water poultices, as union does not take place where much inflm is present.

As a general Rule, it is proper to examine the parts at the end of 8 or 10 days after the first dressing. If any displacement has taken place and an alteration be necessary, it can then be easily made, the new Substance being then quite Soft & pliable.

The patient should be kept to a low diet & and submit to evacuations by blood letting, in proportion to the inflamatory Symptoms.

If the patients constitution be weak it it may not be necessary to evacuate at all.

The dressings at first should be loosly applied or else if the limb swell the circulation may be stoped & so produce Mortification.

The time necessary for an union of the bone varies, by the age constitution and place of fracturing, likewise upon the size and situation of the bone, The bones of young people heal sooner than those of old, fractures of the jaw or ribs heal sooner than those of the Fibula.

The bone in some constitutions does not unite at all firmly, but forms a kind of joint and in fact the ends of the bones are some times tiped with Cartilage, and have a

Sort

and have a sort of capsule or ligament, two cases of this kind were cured in the Hospital by moving the broken limbs so that the extremeties of the bone might rub against each other; This was effected by causing the patient to support himself on crutches, and moving about bearing as much weight as possible on the injured limb, wh irritation seems to cause the process necessary for the formation of Bone, this process very much accellerates the Union.

The adhesive infl.n is produced coagulating lymph is thrown out, wh soon becomes vascular, then cartilaginous, & lastly bone it self

Mr Hunter used to tell us in his Lectures, when the bone will not unite we should make an incision down to the bone, in such cases, but does not tell us of ever having such a case.

It has been recommended to make an incision down to the bone & amputate the fractured ends in the same manner as recommended in wounds of the joints, but this is a very dubious painful & terrifying opperation, & can not be performed in all cases; as in fractures of the leg or fore arm. I would rather advise to prop

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a Seaton between the fractured ends of the bone which is a much simpler method attended with much less inflm. less pain and can readily be performed in any situation. I have performed the opperation in this manner with very good success, It was done by passing a needle armed with a skein of Silk between the divided ends of the bone, this by irritating the part caused suppuration & inflm with granulations; and in 12 weeks time the patient complained of much more pain in bending the arm at that place, these granulations soon united, leaving only the small hole of the Seton wh healed in a few days after it was removed.

In old people it should be kept up for a long time, for it appears to me that the soft parts around the bone begin to form bone first.

Simple fractures mostly unite by the first intention.

Union of Bone requires more time than the union of fleshy parts.

The coagulable Lymph first becoming vas=cular, then Cartilaginous, and then bone, In this way the substance called callous is formed wh being of a larger Diameter, forms a Tumor round the bone at that place, but it generally diminishes becoming lip & lip till it differs but little from the bone it self.

At the first the granulations are full of ves=els. If the wound be simply inflamed, Union by the first intention fails, Suppuration & gran=ulations supervene, and the granulations are found to be vascular only at the extreme point the other parts being of the nature of bone.

## Compound Fractures

The first band of union is lost in compound fractures as the blood wh effects that union escapes thro the external orifice.

Compound fractures some times partake

of

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of the nature of Simple incision, but much oft=
ener however, they are punctured lacerated or
contused, the fractured ends of the bones being
so blunt as to tear the Soft parts, as can the
Soft parts are very much bruised, and the bone
broken into Sveral pieces by the mechanic=
-al force applied, as when it has been run
over by a waggon or any heavy body fall=
ing on it.

Fractures may be transverse, oblique,
longitudinal, or Sperial. Compound fract=
ures are attended Some times with profuse
hemorrhage. when much blood issues from
the wound, we Should apply a tourniquet on
the principal artery; when the blood is thus
stopped we Should next determine whether
the limb can be Saved or not. If it be
So torn & Mangled that the circulation can=
not go on to the extremety, amputation
must be performed. This may be done im=
mediately or you may wait till the Soft
parts Slough & then amputate the bone. If
amputation be necessary I Should prefer it im=

immediately as well some times by that means prevent tetanus, likewise the patient is more willing at that time to submit to it In amputation some times considerable hemorhage takes place from the medulla-ry vessels. Dr. Coach mentions a case in wh the stream of Blood flowing from the me-dullary artery in the tibia was as large as a crows quill, and as it run in a bony canal in the tibia he proposed to make two perforations near the end of the bone with a small trephine, wh was agreed to and the artery by this means laid bear and secured by a perpendicular pressure. But I have found in amputations of the Medullary arteries the Callum of blood effectually stoped by a cedar plug, put in by the side of the artery so as to keep the orifice completely together, and left so for 8 or 10 days, until an union of the side had taken place. If the bleeding take place from any part of a compound fracture in the leg & can not be stoped by other means, the Femoral artery must be taken up. When

the

the inflm is great it demands our attention for if it be suffered to run on to the suppurative stage, the patient will be greatly weakened by the discharge of matter, his constitution becomes emaciated, and hectic fever ensues. When the discharge is very copious and hectic fever has taken place amputation is advisa=
=ble.

## Lecture 9th

Fractures. continued In compound Fractures we should endeavor to remove the splintered portions of bone, (when they can be discovered) if it can be readily accomplished; but if the pieces are attached so as to occasion much pain in extracting them we must omit it, till the process of exfoliation has completely taken place. It sometimes happens that the external communication is very small, so that the blood coagulates in the orrifice completely stopping it up, and renders the cavity perfect so that the bone unites as in simple fracture. But if

if through too much efficaciousness ~~of the surgeon~~
with a view to apert nature . . .

The surgeon should be very careful to work out the coagulum, the fracture would be rendered a compound one, and go through the process of suppuration & granulating. If the external orrifice be very small a portion of dry lint may be bound on it wh will become wet with the blood then dry & form a scale,
after the bones are reduced when the ends are not splintered, the edges of the wound should be brought into contact and secured by means of adhesive plaster, I had a case of compound fracture of the Tibia where the ends of the bone had made their way through the cutiquous parts, the incision was on inch & a half in length, not withstanding by this means, it was reduced to the state of a simple fracture and the patient got well in about 6 weeks. If the inflm runs too high it may terminate in Mortification. To prevent this we should bleed and apply Bread

bread & milk poultices – The bleeding should be according to the indication . . . . . .

Some Surgeons are fearful of large evacuations at first on account of the copious discharge that takes place, fearing they shall reduce the patients system too much, not recallecting that the inflm. wh. precedes it is the cause of the discharge of matter.

But it is necessary to distinguish between mortification caused by inflm. & that which proceeds from weakness. If it be accasioned by weakness, Opium, Bark, Wine, &c should be given; but if mortification be brought on by inflm. in compound fractures apply a Blister. It will here be necessary to distinguish between that Mortification wh is produced by the parts being killed in consequence of the Violence applied, and that wh is the effect of the inflm. induced by the violence, as the parts in the first hearing lost their life must necessarily naturally slough

Bones can not bear a great deal of inflm. without losing their life.

Of

Of particular Bones, and first of the bones of the Nose. These bones tho not so frequently as others are nevertheless some times broken

Some times the fragments are pushed into the Nose, wh occasions a difficulty of Breathing

When in this manner they may be reduced by introducing an armed Spatula, or some thing of that kind into the nostril, & when reduced it may be retained in its place by a lynn elastic Catheter if necessary. If they project outwards, they may be retained in place by applying a compress; or after they are reduced they may be kept in place by strips of adhesive plaster. If the soft parts are injured apply a Bread and Milk poultice.

Of the Lower Jaw. ~~Some~~

Fractures of the Lower jaw Some times occur at the Symphasis, but most commonly at the Sides & at one side only. tho Some times they happen in both at once. they occur most commonly between the chin & processes

The coronoid processes are seldom ever broken, be

because they are so well defended ~~with~~ by Mus=
-cles. & I never saw but one fracture of the
Condile. We can easy tell when it is broken
tho, the fragments be ever so little displaced,
by rubbing the fingers along the bone, it will
occasion pain; and the patient cannot keep
the jaw against the other. when the fragments
are displaced, it is easily discovered by looking
into the mouth and examining the rows of teeth
wh are uneven, When the fracture is on both
sides, the Digastric Muscle will draw down the
Symphysis, while the Temporal Muscles draw the
angles or parts upwards,

Treatment. Some Surgeons advise pieces of
paste board to be applied on the jaw to keep it
in its place, but the upper jaw is the best
Splint to wh the lower jaw can be fixed with
a roller, apply the teeth directly together, having
the rows exactly over each other, and confin=
-ing the jaws by a roller. The bandage wh
is mostly advised is one with four heads ap=
-plying the body of the bandage over the anteri=
=or & under part of the Chin, then drawing two
heads upwards directly over the top of the head

&

and the other two heads from the anterior post around the Occiput & forehead alternately, But I prefer a Simple roller it will answer every purpose, The patient Should be kept upon liquid aliment & forbidden all conversation or Speaking, & he Should not move his jaw for several days. The dressing Should be continued for three weeks by wh time an union will take place.

It frequently happens that the teeth are loose and under this circumstance authors have advised to extract them, but this Should not be done on any account, as there is danger by this means of making a compound fracture. Compound fractures of the Lower jaw are mostly accompanied with Death of the ends of the bone.

## Bones of the Spine

When the process of the Spine only are injured the consequences to be apprehended are not Serious. But when the Spine is wounded there is always an extravasation of Blood

from

from the Vessels of that place, wh extravasation presses upon the Spinal marrow, Some have advised to make an incision down to the bone to discharge the effusion, but as it is very uncertain whether it be posterior or anterior to the Spine, (& if the latter it can not be of any use) I should not advise it. When the injury takes place in the neck above the third Vertebra, wh it mostly commonly does, the patient generally dies (about the third day) a paralysis of the lower limbs comes on, & likewise of the Bladder, so that the patient can not void urine, nor scarcely faeces & breathes with much difficulty. As it is only the Diaphragm wh comes on respiration, the patient should never be laid on his face to examine the Spine or for any purpose, as thereby the pressure of the abdomen, would force up the abdominal Viscera, upwards, and prevent the Descent of the Diaphragm. If the injury happens further lower Down the patient may survive a longer time, but I never knew a case of this kind from wh the patient recovered, The patient is compelled to lie on his back and the parts

on

and the parts on wh he lies Mortify

Fractures happen in different parts of the Spine. These most frequently accur in the Neck, next in the Loins but rarely in the Back. When the Cervical Vertebra are fractured above the phrenic Nerve death is the immediate consequence, but when below it is not so immediately fatal. But a paralysis of the whole parts below the injury takes place, There are cases where the injury is low down, in wh. the Patient lives 5 or 6 Months,

When the Spine is fractured there is always a dislocation and the Spinal marrow is compressed, the discharge of Blood &c. is poured in from the wound, upon the Spinal Marrow and this compresses the Spine, & hence the paralysis, Some Spicula of Bone are turned in upon the Spinal Marrow, I mention this to let you know the hopeless situation of your patient, for I have never known a case where the Spine was fractured to get well, But the processes may be broken without any immediate injury to the patient There is now a case in the Penna Hospital

attempts have been made to extend the Spine & bring the fractured parts into contact This is seldom of any use, yet for the Sat=isfaction of the friends of the patient, we may put it to trial, if the injury is in the neck, the extention may be effected by paping two Band=ages around the head, one from under the chin over the top of the head, the other from the occip=ut around the fore part and secure them to=gether, an Instrument is then formed, being excavated where it rests on the Shoulders, and hav=ing a Screw at the top, and a hole in the piece directly under the Screw, to admit the ends of the Bandages, In this manner the extension is made against the Shoulders (previously having put a pad upon each) by stretching the Bandage in consequence of turning the Screw above.

An other method is to draw the patients head toward one end of the bedsted with a Leathern Strap while the feet are tied to the other end of the bed; & in this way extension is kept up. having a hole in the bed opposite the Arms for a convenience. I once made the attempt at the Penna Hospital, In about 2 hours he was much pleased with the escherriment, as he required the use of his arms wh were before

☞ (turn one page forward)

# Lecture 10th

## Bones of the Pelvis

The bones of the pelvis are very seldom fractured owing to their great strength. I once saw the Dorsum of the Ilium fractured

The Patient can not stand up suffers great pain, conveying a sensation as if he should fall to pieces upon motion of the part a crepitus may be perceived

Treatment all that can be done is to keep the patient at rest, apply the simple broad roller around the pelvis & bleed if the symptoms require, but purges should be most positively objected to, because the situation of the patient will not allow the motion without injury, wh would inevitably ensue from the exhibition of purges. I once saw a case of the seperation of the Symphysis Pubis, in wh the broad Bandage is all that can be done. Union generally takes place in 5 or 6 weeks.

Fractured

before paralytic, but he died on the third day as is usual in such cases. he appeared to die in consequence of Mucus collected in the Trachea & obstructing respiration, owing to the weakness of the expiring force -

You would naturally turn your patient on his belly to examine the Shine, I once did it but keeping my eye on the patient; I soon found that he appeared to be suffocating & I immediately turned him back. It is not safe to do more than turn him on the side, and in this situation you will examine him very well,

There is generally a difficulty of passing Foeces, & a total suppression of urine, in this case the Intestines should be kept open, & the Urine drawn off by the Common Catheter, or what is more convenient the flexible Catheter, wh should remain in the Urethra, and the end of it be stopped with a cork, and by this means the nurse can empty the Bladder at any time. There is sometimes an involuntary discharge of Foeces, but I never knew an involuntary discharge of Urine -

There is great danger that the soft parts on

wh

wh the patient lies will slough off, this should be dressed with Slicking plaster.

no lasting cure can be effected. there is always a lap of sensation & motion below the fracture —

## Fractured Ribs

The Ribs are seldom fractured individually, some times 4 or 5 are fractured at once.

The most common cause of fractures of the Ribs, are falls, or substances falling on us I have seen many from the falling of Mapes of Dirt.

This may be known by the pain wh attends a full inspiration. A hacking cough is generally a concomitant symptom, and by applying the hand on the side when the patient coughs, the Crepitis may be readily perceived; and if the Lungs be wounded the patient expectorates a bloody mucus, and air passes into the Cavity of the Thorax a crackling noise is observable on touching the parts affected, this proceeds from the air suffused into the cellular Membrane, and is called Emphysema — when this takes

place

only in a Small degree it is of no conseq-
-uence, there will be a Small irregularity or
angle at the place of Fracture. If you rub
on the angle it is of an irregular Shape, and
makes a crackling noise, Some times a Swelling
of the body takes place (Emphysema) occasioned
by the air passing from the Lung into the Cavity of
the pleura; wh at every expiration opens into the
cellular Substance, and Some times makes its way
over the whole body, When the Swelling is
partial a cloth wet with brandy may be
applied to the Emphysematous part, and confined
by a roller, Dr Hunter has published an
account of the treatment of Such cases, in the
2nd Vol of the London Medical Observations,
wh I would advise you to read -

The Treatment is to prevent the exercise of
the Ribs, that an union of the parts may take
place. for this purpose a rude bandage Sho-
=uld be passed round the Thorax, So as entirely to pre-
=vents the motion of the ribs in the act of respira-
=tion, wh must be performed by the Diaphragm

It Some times becomes necessary to make a
puncture into the Cavity of the Pleura to discharge
the air, (Paracentesis). When this is done it

Should

Should be made between the sound ribs, and way between the Sternum & Spine, as the pleura is liable to take on inflm & if the puncture is made over the injured Rib, it converts the simple fracture into a compound one, for tho it is already in reality a compound fracture; yet it frequently happens that the wound in the Lungs (made by the fractured extremity of the rib) is so small that the Bone unites as in simple fracture. The air in the cellular Texture may be let out by puncturing, if it becomes necessary tho it never produces inflm, as I observed when treating of wounds.

The ante phlogistic treatment should be pursued, & in fact the case should be treated like a pleurisy

For the cough wh after remains, the patient may take a Spermaceti Mixture, or a solution of Gum arabic in water combined with Laud.

Some times small doses of Liquid Laudm are very serviceable, In about 3 weeks union will take place between the fractured end of the Ribs.

Fractures

Fractures of the Uppers extremeties

& first of the Clavicle. There happens very frequently, and is generally about the middle, and directly across, Sometimes diagonally from within downwards, & diagonally inwards, & downwards

When the fracture happens in the middle there is a great displacement of the bone, and also when the fracture is from without Diagonaly inwards & downwards, owing to the weight of the arm & the action of the pectoral Muscles, the former drawing the Scapular fragment beneath the Sternal fragment & the latter drawing it inwards. but if the bone be broken from within downward & outwards very little or no displacement will take place because the Scapulary fragment, being pulled downwards by the weight of the arm is next firmly supported by the other fragment over wh it rests

When near the Sternal extremety there is seldom much displacement. The patient can not raise his hand to the head, but always when requested to do this reclines the head to the arm.

Also if the bone be broken between the Coracoid process & acromion of the Scapula, no displacement will follow, because the Ligament passing to the Coracoid process will confine one part, and that

to

to the acromion, the other, in this case an un-natural angle is only felt, & if the bones be left in this situation an abscess will follow & bring it to the state of compound fracture. This circumstance should be well remembered, for by being over looked, the little motion it is allowed may prevent its healing and produce an abscess and thereby cause a compound fracture. In cases of fracture of the middle part of the Clavicle we generally find the patient, with the elbow of the affected side resting upon a table or sup-ported by the other hand, the affected shoulder considerably lower than the other, and an inability to raise the arm. By raising the arm a crepitus may be distinctly heard.

Treatment The former method of treating these fractures in England was to put the knee between the shoulders of the patient pull both shoulders back, and while in this situation apply the simple roller so as to form an 8 in shape, and the patients hand supported in a sling, but in this mode of treatment there is nothing to prevent the pectoral Muscle from drawing the scapular fragment under the sternal one. I believe this is the present treatment in England

England & wh I have frequently seen tried there, but with very little advantage, This practice however seldom succeeds & in short is of no servi-ce, but attended with very serious inconven-ences viz of excoriating the axilla, impeding the circulation &c. Desault has lately very much improved the method of setting fractures of this kind, as the great object in fractures of the clavicle is to give some counter action to the weight of the arm & the action of the pectoral Muscle, he places a wedge like pad of horse hair or flannel under the axilla, the largest end being upwards, around this there is a simple roller, this roller should be passed several times around the body to prevent its slipping, this prevents the scapular part from passing below the sternal one. The Pad enables the arm to act as a lever to the clavicle, and effect-ually prevents one fragment from passing under the other. The Pad may be of horsehair, wool ~~wool~~, Muslin, or flannel, the latter is prefered.

Another Bandage is to be applied around the body and over the arm, drawing the elbow close to the body and confine it in that situation & thus prevent the action of the Pectoral Muscle, It may have one or two turns round the wrist to support

Sapphost

support the weight of the fore arm, or a strip may be passed around the wrist & fastened to the other bandages to support its weight. A piece of soft linnen or flannel should be placed between the wrist & body. the weight of the arm should be supported next, for this pur-pose an apprentice should take hold of the el-bow & push the arm upwards, this done a bandage is to be passed around in form of a figure 8, beginning as follows; lay one end on the breast pass over the fractured bone under the elbow, and over the same bone again, then across the back under the opposite axilla, across the breast & so over the fractured bone again, pur-suing the same course as before, we should then feel the pulse, to see if the circulation goes perfectly on, It some times happens that the pad under the arm & the bandages pre-vent the passage of the blood in the radial arte-ry, & you should always feel after applying the bandages if the radial artery pulsates.

Then apply another roller over the whole to keep it more steady. There should be a hole through the slip wh passes over the hand; for the thumb to pass through wh prevents it

from

from slipping up on the hand. at the end of 4 weeks the bandage may be taken off, tho a week longer will not be amiss, as the union will at this time be very weak

## Lecture 11th

## Fractures of the Scapula

This bone is frequently fractured in two places to wit, in the acromion & the inferior angle the former is but little covered with muscles and may be easily felt by the fingers; and also as part of the Deltoid muscle wh supports the arm is attached to it. the arm falls to some distance below its natural position, when ever the acromion process is fractured it is to be treated exactly after the same manner of fracture of the Clavicle. It may be replaced by pushing the arm upwards, that the head of the Humerus may prop up the fractured portion to its proper place, the fore arm may be bent on the Humerus, and the bandage paped as above mentioned The Dressing should be continued about 6 weeks I have never but once seen any other part of

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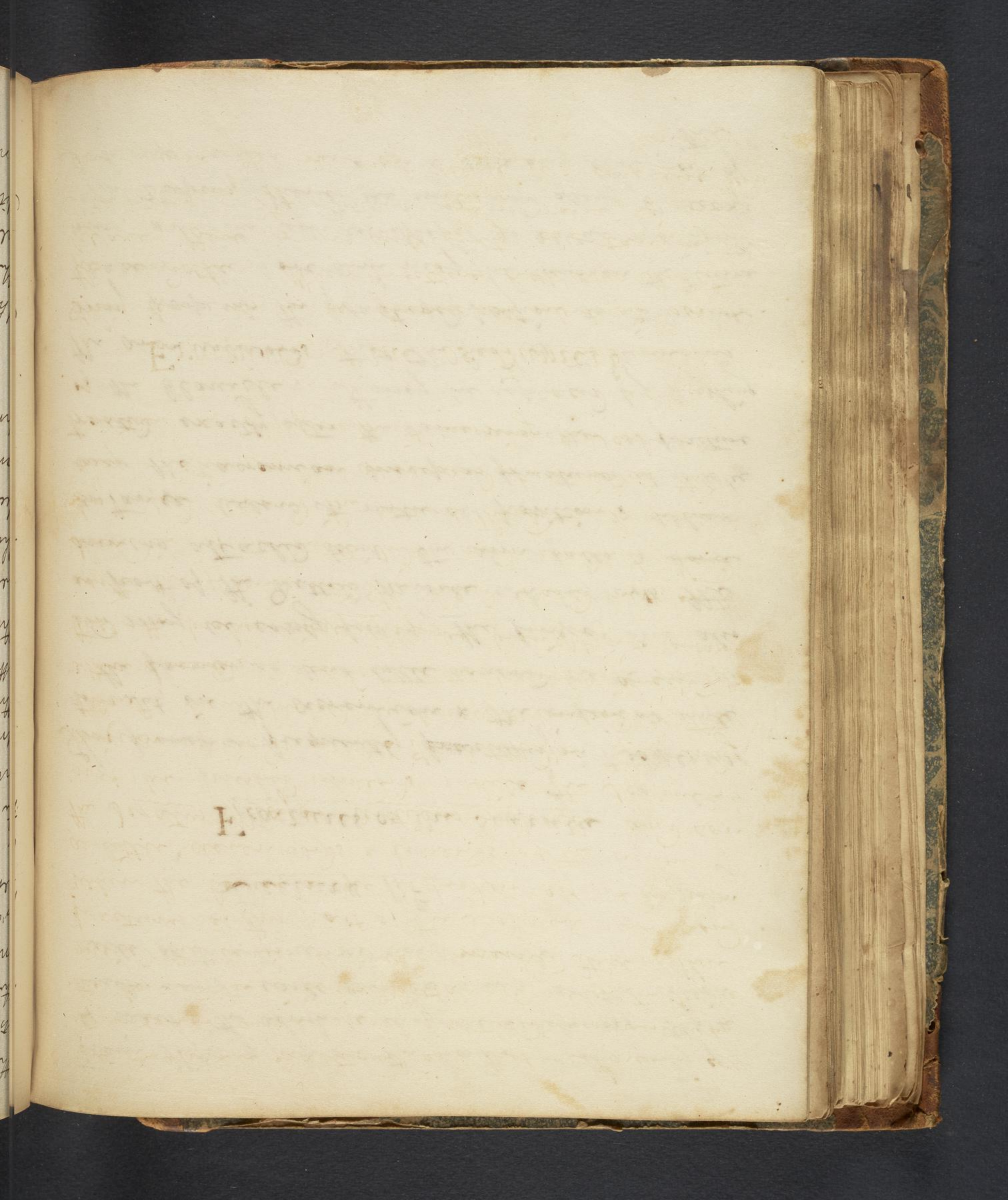

the Scapula fractured, and that was nearly at its inferior angle, and fractured transversely from the base to the inferior Costa and when the Scapula moved the lower fragment remained still, When fractures of this part of the Scapula occur, and when the lower angle is broken off, it is drawn a little downwards & forwards by the action of the Serratus Major anticus muscle, and can not be pushed upwards, while the Scapula is drawn upwards by the Teres Major, To remedy this the hand should be brought forward to the other shoulder, wh draws the Scapula around so that the broken edge may be brought into contact with the fragment. The hand should rest on the shoulder of the well side, and bandages should be passed around the arm & shoulder, to prevent any motion of the arm and keep it in this position & so prevent its moving the Scapula

## Fractures of the os Humeri

This bone is most frequently broken about the middle, When fractures happen about this place, there is no difficulty ascertaining their situation, The Patient can not raise his arm nor use it in any degree, It likewise bends in any

E

in any direction, and the Crepitis may be readily heard & felt. The humerus is some times fractured at the two extremities. when the superior extremety is injured the inferior fragment of the bone most commonly passes inwards but rarely outwards or latterally. If it be fractured outwards the Elbow stands in toward the body & vice versa

This treatment, an assistant should seize hold of the Condyles, bending the Elbow & drawing it a little way from the body, to put the Muscles in a state of greater relaxation an other assistant should take hold, round the patient under the ascilla to make a counter extension, or take hold of the opposite arm. the Surgeon should take hold of the arm & place the ends of the bone in contact, this being done a roller should be applied around the arm from the elbow to the shoulder, it should be pretty tight making a moderate pressure; tho not so tight as to stop the circulation. Three Splints are sufficient to keep the ~~Splints~~ fragments in their proper situation.

These should be of paste board, and secured by an other bandage. The fore arm now remains to be

supported, this is done by a Sling or by rapping a broad roller round the body, having previously put a compress, or Pad of flannel under the arm, for the purpose of making the side level, for the support of the arm. The Bandage for the support of the fore arm begins at the opposite side, passing under the hand over the Elbow, round the body & then pursueing the same course again; at the end of 10 days we should examine the limb, the union at this time will be so soft, that if any displacement has taken place, it may easily be remedied. By the end of 4 weeks the may omit the the bandages gradually. If the forearm swell much we may unrob the Bandages from the ends of the fingers; this is however seldom requisite.

Some times the ashumeri is fractured near its head, the patient complains of pain upon every motion of the arm, pressing the arm against the side causes pain. The lower fragment in most cases is turned inwards towards the thorax, I never saw a case where it was either befor or behind. If it be inward the Elbow stands off from the body; if outwards

if outwards, the elbow bends in towards the body When the lower fragment is in toward the thorax a pad should be applied also upon the axilla between the arm & the side to keep the bone in its right situation.

Fractures near the head of the os humeri have been taken some times for Luxations, & by the surgeon trying to reduce the Luxation much mischief has been done, by irritating the wound & surrounding soft parts, so as in some cases to induce suppuration.

This mischief may readily be avoided by placing the fingers in the axilla, when we shall be enabled to feel the rough end of the fragment instead of the round head of the bone, besides the projection in the axilla not being so large.

Some times when the lower fragment keeps its situation, and the patient cannot use his arm, we are enabled to tell the precise place of solu-tion only by extension & counter extension being made, & the crepitus may be felt by bending the arm. It is of great consequence to ascertain whether the humerus be luxated or fractured, for if the latter, & the lower piece inwards the patient can not rotate his arm, when it is ~~healed~~ supposed to heal in this situation.

Treatment

Treatment In fractures of the head of the bone begin, the bandage at the wrist and wind it to the Shoulder, after the extension & counter extension have been made by an assistant . . .

. . — — — — — — — — — — — —

The Splints should then be applied; two of these will generally be sufficient if they be bent three, if they be narrow, applying one before one on the upper side, and an other on the hinder part of the arm. These are to be secured by a roller. The lower fragment is to be kept out by a pad, wh is best made by a piece of flannel folded up & placed under the arm, this pad answers in stead of a Splint. This being done the arm is to be bent at the elbow, and secured by a broad roller to the Thorax, I prefer the roller to a Sling as the Sling admits of too much motion

Some times a Suffusion takes place at the fractured part, from the extravasation of blood from some injured vessels by the broken fragments. This should be treated as an Ecchymosis. ~~and~~ In about 4 weeks the bone will be united, tho we should examine it in about 10 days, by wh time the Ecchymosis wh frequently appears will have completely subsided and

better enabled to judge of the proper situation
I once saw a case where there was so much
Ecchymosis that I could not feel the bone at all
Mr. Dupuytrens advises, where the effusion is great
to make a free incision down to the fractured
Cavity & discharge the blood, But this should not
be done, as it reduces it to a compound fracture.
The natural process of absorption will mostly
remove it. if however at the end of 3 or 4
months, it be not absorbed, a small puncture
may be made into the Cavity to discharge the
fluid, by this time the bones will have united
and we shall not be in danger of changing the
fracture to a compound one, as soon as the
aspiration is done, the edges of the puncture should
be brought into contact by adhesive plaster, so
that the wound may unite by the first intention

The Humerus is also sometimes fractured
transversely near the Condyles, and sometimes
longitudinally so as to seperate them.
When the Condyles are fractured in this way, by
taking one fragment in each hand, and moving
them backwards & forwards, we easily perceive
the crepitus; if only one be fractured we can
perceive

discover it in the same way, besides this the parts are so thinly covered that the fracture may be readily felt. I have allready said that when the elbow joint is concerned in the injury it is right to keep the arm flexid.
The fore arm should be rendered incapable of motion, and after the fractures are placed right, a bandage should be roped from the wrist to some distance on the humerus (half way).
next Angular Splints four in number in the shape of an L. each forming right angles: should be applied, one over the internal condyles & one over the External one: then two more bent Splints are to be applied, one anterior and one posterior, these Splints are to be secured by bandages. the Splints wh extend along the fore arm, should reach to the wrists. every motion of the forearm displaces the fragments and must be prevented by a bandage, around the body and arm, at the end of 10 days we should take off the dressings & examine the limb. and at the end of 10 days more we should take off the dressings again, and the arm should be gently flexed; this should be repeated daily to prevent stiffness of the joint, (after the 20th or 26th day) this should

this should be done with gentleness and care

## Fractures of the Olecranon ~

These are mostly caused by falls on the Elbow and are always transverse,

When the Olecranon is fractured the Patient is not able to extend the fore arm, because the Triceps Muscle wh extends the arm is inserted into the detached fragment, the upper fragment is drawn a little upwards from its place, by the Contraction of the Muscle & you may move it from side to side.

Treatment. first the fore arm must be extended and the process being placed in its situation is to be secured by bandages (warm from same distance above & below the Elbow) beginning at the wrist & wound to the Shoulder.

When the bandage has got near the Elbow, the Tension must fail if any portion of the Skin has got between the divided ends of bone; the bandage is then to be continued on. A Splint should then be applied on the anterior part of the arm to prevent flexion. after 10 days we may examine the state of the fracture, and after the 20th day we should remove the Dressings gently & gently

gently flex the arm, in order to prevent stiff-
-ness of the joint wh some times happens.
The strapping should be continued about
15 days after till perfect union takes place

## Fracture of the Fore Arm

The bones of the fore arm are frequently fract-
-ured, & the Radius much oftener than the Ulna;
the Ulna being seldom broken alone

The Radius is most commonly fractured at the
Wrist, when the Ulna is not broken with it, and
no difference here can be seen in the length
of the Radius; all the difference that can be
seen, will be an angular projection of the fore
part of the wrist; the fracture is commonly so
low as to be taken for a luxation, The Surgeon
will put the arm in a Sling, and an union
will take place, forming a very disagreeable
projection, & the patient cannot rotate Rotate the
arm as usual, This may serve as a distinguishing
mark, at the fracture there is always an angle formed;
and we may likewise distinguish between fracture
& luxation by the crepitis attending the former,
but besides the crepitis (wh (cannot always be
felt,

felt; we may know by the tubercle at the low-
-er end of the Radius, not being apposite to
the Styloid process of the Ulna as usual: It
some times happens, however, that both are broken
in the same place, when this is the case, the
patient can not flex his arm, the crepitus
may be felt, the arm bends at the place of
fracture, and there will be a lateral deprep-
-ion caused by the bones being brought neover
to each other together. —

Treatment. To bring the divided surfaces into
place, an assistant should take hold of the elbow
and another of the hand, & make the necessary
extension; while the Extension is making, the
Surgeon may replace the ends of the bones
without any difficulty by taking hold of the
arm and squeezing the flesh in between the
bones, so as to prep them out. The inter osseous
ligament will prevent their being pushed too
far out, this being done a bandage is to be
applied, beginning at the wrist & extending it up
to the Elbow, care being taken not to move the
ends of the bones, To Splints should then be ap=
plied, wh should be wider than the arm, &
should be of firm materials; paste board without
being wet

being wet answers

being. wet answers, very well, the Splints should be covered with Soft linnen & extend to the ends of the fingers, the Splint on the back part of the fore arm. Should be applied with the upper end below the Elbow, or else the patient will punch himself when ever the arm is extended;

a Roller is to be passed around the Splints and the fore arm Supported by a bandage having care to keep the Thumb upper most, or else the patient will not be able to rotate the hand, as usual if it be Suffered to heal in an other position, at the end of about four weeks Union will take place

Fractures of the Metacarpal bones. are very rare, but they are usually & indeed always fractured outwards or inwards. The Extension can be made by pulling the fingers. And it is merely necessary to apply two Splints one on the fore part & one on the back part of the hand about the length of the hand & Secured by a roller.

The Phalanges are Some times fractured they are easily replaced & Secured by to Small Splints

Splints; placed one on each side, one on the back & one on the fore part of the finger and a roller pasted around them. If the bones are not properly adjusted the finger remains ever after stiff.

## Lecture 12th.

## Of the Os Femoris

Fractures of the femur occur most frequently about the middle or rather below it some times above, some times at the Trochanter, and in some instances at the Neck, but most generally at the middle.

The fracture may be known first by the pain it gives the patient, 2nd by the Length of the fractured Limb, being shorter. If it is fractured at the middle and the fracture is obligue, it will be considerably shortened, an inch and a half, the fragments of one portion lapping over those of the other in

in consequence of the contraction of the Muscles, 3d an inability to move the Leg. The patient complains of pain in his thigh, it bends at that place & upon Motion the Crepitis is discovered, besides the Limb will be distorted, the toes turning outwards and when one end of the bone passes over the other it will occasion a tumor with some tension at the place. The lower fragment is mostly under the upper one.

Sometimes a fracture happens & the bone maintains its situation, by reason of its being transverse, In that case as the length is not altered it may be known by other signs to wit Crepitus &c.

The Shortness of the injured Leg is owing to the action of the Muscles on the thigh, drawing the inferior portion upwards; also to the action of the gravity of the body when in bed causing the superior extremety of the bone, to fall downwards

The great aim then in the treatment of the Os femoris when fractured, is to invent means to counteract this tendency of the bones to pass by each other from the forgoing causes.

The Method made use of by the ancients was to place a bandage around the Thorax

Thorax under the arms, & fasten it to the head of the bed, an other was fastened to the ankle and around the foot of the bed, & thus the extension and counter extension was kept up

So this, it is an objection that the body is not kept sufficiently fixed, the bedtocks sink down in the bed & thus the fragments are misplaced and an union can not take place.

The manner in wh fractures of this bone have been treated is various. But I shall at present shew the methods wh is now most com=monly in use

I. The Extension & counter extension being made by assistants, the bone is replaced by the Surgeon and short strips of Muslin or linnen placed under the thigh, are knot over, and made to decussate each other at the top, a Splint is then applied at the posterior part and an other at the anter=ior part of the thigh. these Splints are thin pieces of cedar glued on leather, and are secured by pieces of tape tied round one at the upper & one at the lower end. Two small bundles of straw, are then applied, one on the inside wh is shorter, and an other on the out side, and secured by tape.

To

To prevent the foot from turning out, a bandage is fixed to the inner bundle, roped around the foot and fixed to the outer side. This is now I believe, the mode of treatment in London, it is however inconvenient.

Mr. Pott supposed that the Shortng of the Limb wh frequently occured was owing to the Muscles being in a state of tension, when the Limb was straightened out he therefore changed the position ordering the patient to lie on the injured side, and have the thigh drawn up toward the Pelvis & the leg bent on the thigh, and thereby placing the Muscles in a state of relaxation. but this will not be found to answer, for often the ends of the bones will irritate the Muscles causing them to contract involuntary=ly & displace the bone, Besides we can not ascertain the length of the Limb, since measuring from the anterior Spinous process of the illium in this position is very inconvenient. Besides the patient is apt to turn on his back when asleep, and the continuance on the side is very irksome, and indeed the Patient can

not

not lie on his side so long. To obviate this it has been contrived for the patient to lie on his back, & to have his thigh & leg to rest on a Machine some what like the roof of a house. So that the Muscles might be relaxed. But in this position, every time the bed pan is put under him, the Limb will be displaced. To prevent this the son of Mr James Earle has has contrived a double bed with pulleys to hoist the upper one, wh must have a hole cut through it opposite the anus, for the pas=sage of the foeces to the pan wh is to be placed under it. The hole is to be filled with a Cushion wh is made to fit it, but this is very complicated & seldom to be got, and is therefore impractible in private practice.

He has however made an improvement in the Bandages, having them shot in the above described manner so that the Limb may be examined in just opening them at the Top without disturbing it.

I have never known Mr Pitts Method succeed in a single instance. The Patient will always turn on his back in the Night and another very serious inconvenience is

see

we can not tell whether the limb is in its proper direction. I had the chance to put this plan of Pattis to the test in the Penn^a Hospital, a boy was admitted to the hospital with a fractured femur, he was treated according to Mr Pattis Direction, after a while the bone united & he was permitted to go out, but by some slip of his crutch he fell, and the bone was broken exactly in the same place, he was again admitted to the Hospital, and his leg was then extended, he recovered much sooner than before & he assured me with much less pain.

All these modes are found to be incon=-venient for securing the fractured femur. the body naturally descends on the lower extremeties when treated in this manner, as the patient lies in bed

Depault has greatly improved the Duping of fractured thighs by the invention of the long Splint, this is the latest & best method

I now shew you Depaults Treatment the first thing to be done is to prepare a proper bed, this should be made of firm boards covered with a Matrap, or if

if this cannot be procured, a Sacking bottom very tight so that the patient cannot sink down, and he should not be allowed more than 2 pillows. There are several parts of this Dressing. 1st there should be 3 strips of tape laid transversely on the bed, one to come just above the knee & one just below it, one at the upper part of the thigh, and one at the ancle, over this a broad piece of cloth wh may be of Muslin or Linnen, to wrap the sheets in, this should be widest at the out side having the acute angle at the outer & upper side, next on this a bandage of strips long enough to reach round the thigh, laid with the edges in contact or so as to lap a little with each other, & placed so as to reach from the perineum to the knee; 4th a silk handkerchief laid so as to come under the perineum and across the pelvis to make the counter extension, The Patient may then be laid upon the Dressings, on his back, have at hand two splints of pasteboard or shingle, next 2 strong bandages one to pass over the tuberosity of the ischium

and

and the other around the foot, a silk handkerchief answers very well for the last this should pass around the ancle crossing on the top of the foot & tie on the sole. 5th a short splint of the length of the thigh to be placed on the anterior part of it. 6th a small piece of Leather spread with adhesive plaster, & laid on the perineum, the hair being previously shaved off, to prevent any excoriation from the counter extending handkerchief. 7th an other handkerchief to pass around under the heel, and decussated at the top of the foot, brought below it & tied to make the extension; ~~Caution~~ the same caution is here requisite as on the perineum, 8th a short splint to go on the inside of the thigh, and as long as at the out side for making the extension, the extension & counter extension & counter extension being made & the bones placed in their right situation the short bandages are to be folded one by one on the thigh, so as to make the appearance of one continued bandage.

They

fold the Square piece of linen over them &
tuck it in between the Shins & the leg –

They should not be applied very tight or they would impede circulation, the great object of this bandage is to keep the Muscles more at Rest —

The long Splint, now rolled up in linen prepared for that purpose, is to be applied to keep up the extension.

The excavated longer & goes under the axilla, the holes at the top of the Splint are next to receive the counter extending handkerchief for securing it, the hole at the other end of the extending one, after pasing over the cloth, wch we lay in unrolling the cloth edgeways, wh is designed for keeping the foot straight, and having the extension directly under the foot in a straight line.

The other short Splint is to be rolled in the same manner to reach from the sole of the foot to the perineum — let then a thin piece of Shingle be placed on the anterior part of the thigh, & an other on the posterior part of the thigh immediately over the fracture x. Notwithstanding the Splints are wrapped in linnen, there will be when they are applied some bare cavities

wh

wh are to be filled up with bags of chaff
placed to fill the cavities formed by the
Straight Splint & the Shape of the Leg. Chaff
is preferred because it can be removed from
one end to the other easily. The whole then
are bound together by the Strips of Tape
In order to keep them still firmer a wide
Bandage is passed around the pelvis and
the long Splint, twice or three times wh prev=
ents any motion, and the Splint is kept more
firmly to its place. The bandage being
passed around the foot & fastened to the
lower end of the Splint, in this way ex=
tension & counter extension is kept up.
and the patient having many points to
rest upon by lying on his back, remains
much easier than in any other posture
we should now examine the length of the
Limbs, if the fractured one be too short, incr=
ease the extension, & when the bandages get
Slack they should be tightened, The fractured
ends should not be drawn so as to come in
contact at first, when there is violent con=
traction of the Muscles, it will cause
great

great excoriation, but by keeping a moderate extension for a few days, the Muscles yield to the force & are easily over come —

## Lecture 13th

The Splint now in use generally for keeping up the extension, is not that originally proposed by Mr Desault, but is considerably altered in its form. The one originally invented by him come only to the upper part of the Shine of the illi=um, and extended a small way below the foot. The fault of this apparatus is that the Slip for the Counter extension is too trans=verse with respect to the direct position of the Leg, tending therefore to draw the Inferior fragment of the bone outwards, from its apposition with the other. To remedy this I therefore lengthened the Splint so as to reach up to

up to the axilla; by this means the place for securing the counter extending force, could be brought to a straight line with the limb, and by placing a pad to the part in contact with axillæ, a portion of the counter extending force might be supported under the axilla, and thereby prevent the excoriation of the perineum. This is particularly useful in women whose urine is very apt to get under the dressing and excoriate the parts. When excoriation takes place they may be washed with a little brandy; this I have found an excellent remedy. To prevent excoriation it is a good plan to remove the bandages & wash the parts with brandy -

An other defect in Desaults method of dressing was, that it drew the whole leg & foot too much outward. To remedy this Dr Warbhom proposed having a block fixed at the lower end of the splints, so that the bandage around the foot might pass over it, and extend in a more direct line with the limb.

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a Caution with regard to the extension of the Leg, as befor mentioned might be observed viz that of making the extension by degrees, for soon after the fracture the Muscles are more rigid, than after a day or two, there=fore the same force wh needed not at first effect the extension, may be sufficient, and the great force at first might excoriate the parts. On the whole this is all the apparatus necessary in an oblique fract=ure of the Femoris. If it be transverse the parts some times remain in apposition, and need nothing but simple Splints.

an other method.

Some times fractures happen at the end of the femur, this may take place near the trochanter or near the round head of the bone, or the head it self may be fractured within the Ligament, The patient is often sensible of the crack at the instant it happens and can not raise himself from the ground, walk, or stand. Tho Mc Dispault

Dupault mentions two cases where the patient could walk, the fragment having become so interlocked. The foot turns inward seldom or ever outward tho it is said some times to do so. The Surgeon can pretty readily extend the Limb, if he is called in soon after the accident, but if a considerable time has elapsed more force will be necessary, and I have some times been obliged to bleed ad Deliquium Animi. The extremities being brought into contact the Crepitus may be perceived

There is an other circumstance by wh the extremities of the fracture may be found. Place your fingers on the great trochanter & then Rotate the Limb, if the Neck of the bone be broken the rotation will appear to be on the axis of the Thigh bone or as if the bone revolved on a pivot, but if it be broken lower down, the axis will be thro=
=wn further off and the trochanter will describe a much larger circle. The Idea of the Thigh bone revolving on a pivot will be strongest, when the Neck is fractured nearest the trochanter. If the Limb

be

If the Limb be ~~fractured~~ much inflamed we must decline setting it till the inflam. is abated.

The fractures of the Neck I believe heal as soon as any other part of the bone unless when they occur within the Capsular Ligament; & I have seen a case where a fracture of this kind did not unite in eight years, as we can not always ascertain exactly fractures of the upper part of the thigh, it is right in all affections of this kind to apply Desault's apparatus

It would be right to inform the patient of the difficulty of union when fractures occur within the Capsular Ligament or even in any part of the Neck of the bone

The Dressing should be continued 55 or 60 days Desault says. I have seen but very few fractures of the Neck of the thigh bone, indeed I may say but one, in this case the apparatus was taken off at the end of 6 weeks and the union was yet very soft. The patient could not walk for near a year, and still limps, yet he was not old. I think that only a part of

ligament

Ligament had formed between the divided extremities. In every case therefore we should continue the dressing according to Desault

Contusions on the buttock are sometimes mistaken for fractures of the Neck of the femur, they may commonly be distinguished by the Length of the Limb being the same as the sound one -

Sometimes the femur is fractured lower down than the

middle, occurring first above the condyles, the lower fragment. Sloping upwards, and backwards. When it is broken this manner, splints applied on each side are sufficient. Desault's apparatus answers this purpose very completely. A thick compress should be laid under the leg to raise the lower fragment. Sometimes, besides being fractured above, the condiles are likewise separated. Fractures of the thigh-toone at this place, are easily ascertained.

The Thigh bones at the place, and cripitus are readily felt; the patient cannot bend his leg, & when the condyles are separated, the cripitus may be felt by grasping the condyles with each hand, and rubbing them together. I never but once saw a case of this kind, and this was at the hospital; but in this case, the extremities of the upper fragment, pierced thro the integuments, and made a compound fracture, communicating with the lower joint, and the patient shortly died. Splints on each side are

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here sufficient necessary. — I shall now shew Dr. Hartshorns method, which is certainly a very ingenious one, and sometimes answers better than Defsaults. The principal object is to make extension and counter extension fall in a strait line with the limb, and thereby avoid any displacement by the extension ~~~~ application of the apparatus. ~~~~ another advantage is, preventing the foot from turning outwards. One advantage in particular derived from this mode of dressing is, when the fractured ends form an angle anteriorly, which by this manner of dressing can be kept down compliteley by a compress, you will perhaps think that a bandage in the useal manner might do: but it will be found insufficient. The chief use of bandages next the thigh is to prevent the action of the muscles, and may likewise give some lateral support.

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# Lecture 14th.

## Fractures of the Leg.

There occurs most frequently about the middle, and when transverse, accompanied with little or no displacement of the fragments but if the bones are broken obliquely, the lower fragment passes behind the upper, forming an angle anteriorly; the upper and lower fragment being drawn back by the contraction of the muscles. The tibia, is more commonly, fractured, than the fibula. They occur sometimes at the upper end near the head, sometimes at the middle, and sometimes just above the ancle. If one bone only is broken, the other keeps it in its proper situation. If it be the tibia by grasping the limb above and below, and trying to bend the leg, the fracture may be ascertained; If it be transverse, no displacement will take place.

I once had a case of this kind, when the patient often having his limb dressed, and being in bed

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for three days, felt so easy as to suppose that I had been mistaken & that the limb had not been broken: the bandages were therefore taken off & the patient began to walk about the room: they — family also thot, I had been mistaken, — — Being confident of the existance of the fracture, I requested him to let me see him walk; he did so, but the bone frequently bent under him and he fell on the floor, and had nearly con=verted it into a compound fracture. In all cases by grasping above and below the fracture, and moving the limb, the crepitus may be felt by moving the foot. — — — —

## Treatment.

The leg is to be laid on a pillow. After the ex=tension and counter extensions are made, and the fractured extremities are brot in con=tact, a roller may be applied, from the ancle to the knee but as this cannot easily be opened to examine the limb, I prefer the strips. During the application of these the ex=tension and counter extension should be kept up by assistants if two splints are then

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to be applied, one on the inside and one on the out=
=side of the leg, and secured by peices of tape
The splints should be of pasteboard. Support
the leg and keep it fiam, two narrow boards
are to be placed, one on the inside and the other
on the outside of the pillow on which the leg
rests, and to be secured by tape.
If it be left in this manner, the foot will
fall outward and downward; a bandage
pinned to one side and passed round the
foot and secured to the other will prevent
this. A cradle or in want of this, a couple of
hoops of a flour cask with about one third
cut out of each hoop, and crossed in the mid=
=dle at right angles are to be placed over the
limb to support the bed clothes.
When the tibia and fibula are fractured tra=
=nsversely, this method answers very well,
but when obliquely, an angle will be for=
=med anteriorly, and the leg will be shor=
=ter on account of the contraction of the
muscles. In these cases the extension
& counter extension invented by Dessault

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has been greatly improved by Dr. Hutchinson who=
=ses method I now show you. The counter exten=
=sion is made by two peices of tape placed on
the inside, and two on the outside of the leg;
then a roller passed round them below the knee
so as to secure them in that situation. This
should be drawn tight, or else the limb will be
apt to swell in consequence of the superficial
vains being pressed. A silk hankerchief whi=
=ch is best should be passed under the heel &
foot, but, on the top of the foot, doupated and
carried below and tied to make the extension.
Strip bandages are to be placed under the limb;
enough to ~~make~~ reach from the ancle to the
knee. The extension and counter extension
are now to be made by assistants, while the
surgeon wraps the bandages.

Two splints with ~~bandages~~ holes ~~th~~ in this=
manner ( fig ) are next to be placed, one
at each side of the leg, is to be passed thro' the
two smaller holes at the upper end of the sp=
=lint and tied while a bar is passed thro'
a large one beneath foot; and fastened with

wooden pieces. The extending hankerchief is tied to the bar, by which means the extension is completely kept up. Two bags of chaff are to be placed between the legs & splints, one on each side, and the leg supported by a pillow. The greatest inconvenience resulting from this mode of treatment, is the swelling of the leg occasioned by the bandage round the knee: the foot too often swells in consequence of the lymphatics being pressed as well as the veins. This mode of treatment will not do when any considerable swelling or inflamm=ation exists, as it will tend to increase it. This is a good method for compounds fractures as it can be easily opened to examine the limb, and to apply dressings to the wound, and the ex=tension and counter extension can be preserved when the fracture is oblique. In one instance of this kind of treatment, the limb swelled so much that I was obliged to omit it, and use Defsaults apparatus. Somtimes the tibia is fractured near the knee joint. In fractures happining at this place, seldom

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any displacement occurs, but the joint is very apt to swell, and become very much enlarged, and is often dificult of cure. I have seen a case of this kind, where all the antiphlogistic remedies had been tried, as bleeding, purging, cupping the application of leeches &c. but with no be=
=nefit, which was cured simply by extension & counter extension, and the antiphlogistic regimen. — The patient should be kept in bed a long time, as union does not take place soon. When they happen at the knee, the limb should not be moved for 4. weeks, and the dressings should be continued for six weeks, and then moved, but little, and very carefully. When it is fractured at the ancle the same treatment is necessary. —

The fibula is mostly fractured at the lower part, near the ancle, but if broken by a blow, it may be fractured where the violence is applied. But the fibula is sometimes broken by an abduction of the foot, and the foot like=
=wise luxated. The reduction of it may be easi=
=ly accomplished, by grasping the foot and —

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making extention. For fractures of the fibula — bandages should not be tight, for the same reason as in the fore arm. Two splints are to be applied — at the sides of the leg, to steady the foot as the — cure cannot be accomplished, if the foot be allowed to move, because the lower fragment will follow the motion of the foot. —
In about 25 days union will be effected. —

## Of the Patilla.

Fractures of the patilla are commonly trans= =verse, sometimes they are oblique, and I once saw one longitudinally. The transverse are gen= =erally occationed by a violent extension of the leg, and the oblique by violent external force, as falling on the knee &c. When a fracture of the patilla takes place, the knee becomes tumified and the upper fragment is drawn upwards by the contraction of the muscles; the lower fragment being fixed cannot move. —
The patient cannot walk forward, becaus he cannot extend his leg; but can go backwards

drawing his leg after him. When the leg is extend=
=ed on the thigh, the upper fragment will ~~com~~
sometime come in contact with the lower one,
and the crepitus may be felt. In longitudinal
fractures the vacancy can easily be felt, the
ligaments are so thin, and crepitus may be per=
=ceived by rubing the parts against each other.

## Treatment.

In transverse fractures, bring the upper frag=
=ments down as near as you can to the lower one.
The patient is to be laid on bed, and the trunk
raised by means of pillows, so as to relax the
extensort muscles of the leg. The leg two is to be
elevated in the same way. When the patient
is placed in this way, and the fragments are
both close, apply a bandage from the foot to
the knee. An assistant then holds the upper
fragment down, while the surgeon passes
another bandage from the ~~foot~~ high to the knee.
The fragment being thus brot together, a
compress is to be applied above the upper
fragment, and a similar one below one

these compresses are secured by a roller passed round the knee, nearly in the form of figure 8, as follows; beginning above the patella pass under the popliteal ^ples over the tibia just below the patella, under the ^ples again, and then over the knee joint above the patella, and soon persuing the same course again, this is the best mode of dressing. The compresses being secured, pass the bandage over the patella, so as to cover it to prevent the soft part from swelling. In this manner the fractured ends of the bone can be kept in contact together. The bandage wrapped from the foot, keeps the part from swelling; while that from the thigh, not only prevents swelling, but contracts the disposition of the muscles to contacts. To prevent flexion of the leg, a splint reaching from the ischium nearly to the heel, is to be applied nearly on the posterior part of the leg; it would be covered with a flannel, and secured by a roller. If the splint reach below the foot the prepare accasioned on

on the heel may cause ulceration. The leg is to be kept closed some time. Sometimes surgeons have been afraid to bring the edges of the patilla in contact, fearing the bony matter would be effused into the cavity of the joint, and occasion anchylosis. If the bandages on the upper fragment be too tight, anchylosis will sometimes actually take place. Trifure causes an absorption of the cartileges, and union takes place between the bones, rendering the joint stiff. The bandage should never be applied tight if much inflammation exist. Union will be a good while taking place, about 8 Weeks, When the dressing becomes loose, the are to be renewed by the surgeon. In longitudinal fractures, a compress is to be applied at each side, and the flexion secured. Sometimes the upper fragment, when no attention his paid, is drawn up three or four inches, and a ligament is formed. Uniting the ends of the bones to a fist the motion of the leg indeed we can seldom ever bring the fractured ends of the bone so close

together as to form a bony union. —

This ligamentous union, altho' it has been sup=
=posed an imperfection in the animal oeconomy
is a surprising Proof of the Perfection thereof,
for a bony matter had been thrown out and com=
=pletely ossified, the knee would have been
entirely stiff, whereas, by this ligament
being formed, the Patient may come to=
have the perfect use of his limb, by gen=
=tly exercising it daily. The Patient sho=
=uld set on a table and swing his leg as
much as possible. Altho' he will acquire
strength but slowly; yet by perseverence
the muscles will accommodate themselves
to the extra length of the tendon, and the
patient will be able to walk as well as ever.

Empl^m of Arcenic

℞. Arcenic (White oxide) ℥j

Sulpher — ℥j

Distilled Vinegar — ℥j

White Lead ℥j —

The above has been found useful in Cancers & ill conditioned Scrofulous ulcers —

Thatchers Dispensatory page 291

PHYSICKS

LECTURES